CHAPTER

32

LANDING GEAR

CHAPTER 32
LANDING GEAR

Subject/Page	Date	COC
32-EFFECTIVE PAGES		
1 thru 23	Feb 15/2025	
24	BLANK	
32-CONTENTS		
1	Feb 15/2023	
2	Oct 15/2024	
3	Oct 15/2024	
4	Oct 15/2024	
O 5	Feb 15/2025	
6	Jun 15/2018	
O 7	Feb 15/2025	
8	Oct 15/2023	
9	Oct 15/2021	
10	Oct 15/2023	
11	Oct 15/2024	
O 12	Feb 15/2025	
O 13	Feb 15/2025	
14	Oct 15/2023	
15	Oct 15/2024	
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24	Oct 15/2023	
25	Feb 15/2024	
26	Jun 15/2023	
27	Oct 15/2024	
28	Jun 15/2024	
29	Jun 15/2024	
R 30	Feb 15/2025	
O 31	Feb 15/2025	
32	Jun 15/2024	
33	Jun 15/2024	
32-CONTENTS (cont)		
34	Jun 15/2024	
35	Jun 15/2024	
O 36	Feb 15/2025	
37	Oct 15/2024	
38	Oct 15/2024	
39	Jun 15/2024	
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42	Jun 15/2024	
43	Oct 15/2024	
44	Oct 15/2024	
32-00-00		
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203	Oct 15/2015	
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32-00-00		
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907	Feb 15/2023	
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909	Oct 15/2024	
910	Feb 15/2023	
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914	Jun 15/2024	
915	Jun 15/2024	
916	Jun 15/2024	
917	Jun 15/2024	
32-00-00 (cont)		
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950	Oct 15/2024	
951	Oct 15/2024	
952	Oct 15/2024	
953	Oct 15/2024	

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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Subject/Page	Date	COC
32-00-00 (cont)		
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R 202	Feb 15/2025	
203	Jun 15/2020	
204	Jun 15/2020	
205	Jun 15/2018	
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210	Jun 15/2020	
211	Jun 15/2020	
R 212	Feb 15/2025	
R 213	Feb 15/2025	
214	Feb 15/2024	
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603	Jun 15/2017	
604	Jun 15/2017	
32-00-10		
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702	Oct 15/2017	
703	Oct 15/2017	
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32-00-10		
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802	Feb 15/2022	
32-00-11		
701	Oct 15/2017	
702	Oct 15/2017	
703	Oct 15/2017	
704	Oct 15/2017	
32-00-37		
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202	Feb 15/2021	
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204	Feb 15/2015	
205	Feb 15/2015	
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207	Oct 15/2018	
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O 205	Feb 15/2025	
O 206	Feb 15/2025	
O 207	Feb 15/2025	
O 208	Feb 15/2025	
O 209	Feb 15/2025	
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R 216	Feb 15/2025	
R 217	Feb 15/2025	
R 218	Feb 15/2025	
O 219	Feb 15/2025	
R 220	Feb 15/2025	
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403	Oct 15/2020	
404	Oct 15/2020	
405	Oct 15/2022	
32-09-01 (cont)		
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R 502	Feb 15/2025	
503	Oct 15/2015	
R 504	Feb 15/2025	
R 505	Feb 15/2025	
R 506	Feb 15/2025	
O 507	Feb 15/2025	
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508	BLANK	
32-09-10		
R 401	Feb 15/2025	
R 402	Feb 15/2025	

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Subject/Page	Date	COC
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R 403	Feb 15/2025	
O 404	Feb 15/2025	
O 405	Feb 15/2025	
R 406	Feb 15/2025	
R 407	Feb 15/2025	
R 408	Feb 15/2025	
A 409	Feb 15/2025	
A 410	BLANK	
32-09-10		
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R 502	Feb 15/2025	
R 503	Feb 15/2025	
R 504	Feb 15/2025	
R 505	Feb 15/2025	
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513	Oct 15/2024	
514	Feb 15/2021	
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32-09-12		
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507	Oct 15/2023	
508	Feb 15/2022	
509	Feb 15/2022	
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513	Oct 15/2024	
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32-11-00		
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203	Oct 15/2021	
204	Oct 15/2023	
R 205	Feb 15/2025	
206	Oct 15/2023	
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R 409	Feb 15/2025	
410	Oct 15/2023	
32-11-00 (cont)		
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413	Oct 15/2024	
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417	Oct 15/2023	
418	Jun 15/2024	
419	Oct 15/2024	
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O 438	Feb 15/2025	
R 439	Feb 15/2025	
440	Oct 15/2023	
441	Oct 15/2023	
442	Oct 15/2023	
443	Oct 15/2023	
444	Oct 15/2023	
445	Oct 15/2024	
446	Oct 15/2023	

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448	Jun 15/2024	
32-11-00		
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603	Feb 15/2021	
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32-11-21		
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R 802	Feb 15/2025	
803	Oct 15/2023	
804	Oct 15/2023	
R 805	Feb 15/2025	
806	Oct 15/2023	
807	Jun 15/2023	
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829	Jun 15/2023	
32-11-21 (cont)		
830	Oct 15/2023	
R 831	Feb 15/2025	
832	Oct 15/2023	
833	Oct 15/2023	
834	Oct 15/2023	
R 835	Feb 15/2025	
836	Oct 15/2023	
837	Oct 15/2023	
838	Oct 15/2023	
839	Oct 15/2023	
840	Oct 15/2023	
841	Oct 15/2023	
842	Oct 15/2023	
R 843	Feb 15/2025	
844	Oct 15/2024	
845	Oct 15/2024	
846	Oct 15/2023	
847	Jun 15/2023	
848	Oct 15/2024	
849	Jun 15/2023	
850	Jun 15/2023	
R 851	Feb 15/2025	
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853	Jun 15/2023	
R 854	Feb 15/2025	
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R 857	Feb 15/2025	
R 858	Feb 15/2025	
R 859	Feb 15/2025	
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32-11-37 (cont)		
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32-11-51		
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32-11-61		
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402	Oct 15/2023	
403	Oct 15/2023	
404	Oct 15/2015	

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407	Oct 15/2023	
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409	Feb 15/2023	
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412	Oct 15/2023	
413	Oct 15/2023	
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R 418	Feb 15/2025	
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R 429	Feb 15/2025	
R 430	Feb 15/2025	
O 431	Feb 15/2025	
O 432	Feb 15/2025	
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403	Oct 15/2023	
32-11-62 (cont)		
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32-11-81		
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410	Oct 15/2022	
32-11-81		
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604	Oct 15/2015	
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606	Oct 15/2015	
32-11-83		
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402	Oct 15/2024	
403	Oct 15/2024	
404	Oct 15/2024	

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R 406	Feb 15/2025	
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408	Oct 15/2024	
32-11-85		
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808	Oct 15/2015	
809	Jun 15/2016	
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32-11-89		
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R 402	Feb 15/2025	
R 403	Feb 15/2025	
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R 407	Feb 15/2025	
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R 409	Feb 15/2025	
R 410	Feb 15/2025	
R 411	Feb 15/2025	
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605	Oct 15/2015	
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R 404	Feb 15/2025	
R 405	Feb 15/2025	
R 406	Feb 15/2025	
R 407	Feb 15/2025	
R 408	Feb 15/2025	
32-13-11 (cont)		
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R 410	Feb 15/2025	
R 411	Feb 15/2025	
R 412	Feb 15/2025	
R 413	Feb 15/2025	
R 414	Feb 15/2025	
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O 437	Feb 15/2025	
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32-13-11		
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R 502	Feb 15/2025	
R 503	Feb 15/2025	

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O 504	Feb 15/2025	
O 505	Feb 15/2025	
O 506	Feb 15/2025	
O 507	Feb 15/2025	
508	Jun 15/2019	
509	Jun 15/2019	
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R 518	Feb 15/2025	
R 519	Feb 15/2025	
R 520	Feb 15/2025	
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O 502	Feb 15/2025	
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506	Feb 15/2022	
32-13-21 (cont)		
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508	Oct 15/2017	
509	Oct 15/2017	
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32-21-00		
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203	Oct 15/2021	
204	Oct 15/2022	
R 205	Feb 15/2025	
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R 417	Feb 15/2025	
R 418	Feb 15/2025	
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420	Oct 15/2024	
421	Oct 15/2024	
32-21-00 (cont)		
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R 424	Feb 15/2025	
R 425	Feb 15/2025	
R 426	Feb 15/2025	
R 427	Feb 15/2025	
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R 430	Feb 15/2025	
R 431	Feb 15/2025	
R 432	Feb 15/2025	
O 433	Feb 15/2025	
O 434	Feb 15/2025	
32-21-00		
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603	Feb 15/2024	
604	Oct 15/2024	
605	Oct 15/2024	
606	Oct 15/2023	
R 607	Feb 15/2025	
R 608	Feb 15/2025	
609	Oct 15/2023	
610	Oct 15/2024	
611	Oct 15/2023	
612	Oct 15/2023	
613	Oct 15/2023	
614	Oct 15/2023	
32-21-00		
801	Feb 15/2023	
802	Feb 15/2023	
803	Feb 15/2023	
804	BLANK	
32-21-11		
801	Feb 15/2019	
R 802	Feb 15/2025	
803	Jun 15/2023	

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Subject/Page	Date	COC
32-21-11 (cont)		
804	Jun 15/2023	
R 805	Feb 15/2025	
806	Jun 15/2023	
807	Jun 15/2023	
R 808	Feb 15/2025	
809	Jun 15/2023	
810	Jun 15/2023	
811	Jun 15/2023	
812	Oct 15/2024	
813	Jun 15/2023	
814	Oct 15/2024	
815	Oct 15/2024	
816	Jun 15/2023	
817	Jun 15/2023	
818	Jun 15/2023	
819	Oct 15/2024	
820	Jun 15/2023	
821	Jun 15/2023	
822	Oct 15/2024	
823	Jun 15/2023	
824	Jun 15/2023	
825	Jun 15/2023	
826	Jun 15/2023	
827	Jun 15/2023	
828	Jun 15/2023	
R 829	Feb 15/2025	
R 830	Feb 15/2025	
831	Oct 15/2024	
832	Oct 15/2024	
R 833	Feb 15/2025	
834	Feb 15/2024	
835	Feb 15/2024	
836	Feb 15/2024	
837	Feb 15/2024	
838	Feb 15/2024	
839	Feb 15/2024	
32-21-11 (cont)		
840	Jun 15/2023	
841	Feb 15/2024	
842	Feb 15/2024	
843	Feb 15/2024	
R 844	Feb 15/2025	
845	Jun 15/2023	
846	Oct 15/2024	
847	Oct 15/2024	
848	Jun 15/2023	
R 849	Feb 15/2025	
R 850	Feb 15/2025	
R 851	Feb 15/2025	
852	Feb 15/2024	
853	Feb 15/2024	
854	Jun 15/2024	
855	Feb 15/2024	
856	BLANK	
32-21-14		
401	Jun 15/2024	
402	Feb 15/2023	
403	Feb 15/2021	
404	Feb 15/2021	
32-21-21		
R 401	Feb 15/2025	
R 402	Feb 15/2025	
R 403	Feb 15/2025	
R 404	Feb 15/2025	
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406	Nov 15/2022	
407	Nov 15/2022	
408	Nov 15/2022	
409	Feb 15/2023	
R 410	Feb 15/2025	
R 411	Feb 15/2025	
412	Oct 15/2021	
R 413	Feb 15/2025	
R 414	Feb 15/2025	
32-21-21 (cont)		
R 415	Feb 15/2025	
R 416	Feb 15/2025	
R 417	Feb 15/2025	
R 418	Feb 15/2025	
R 419	Feb 15/2025	
420	BLANK	
32-21-21		
601	Oct 15/2017	
602	Oct 15/2017	
32-21-24		
R 401	Feb 15/2025	
R 402	Feb 15/2025	
403	Oct 15/2024	
R 404	Feb 15/2025	
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408	Feb 15/2019	
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412	Oct 15/2024	
413	Oct 15/2024	
414	Oct 15/2024	
415	Oct 15/2024	
416	Feb 15/2019	
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418	Oct 15/2024	
419	Feb 15/2019	
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421	Feb 15/2019	
422	Oct 15/2024	
423	Feb 15/2019	
424	Jun 15/2023	
R 425	Feb 15/2025	
426	Oct 15/2024	
427	Oct 15/2024	

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Subject/Page	Date	COC
32-21-24 (cont)		
428	Oct 15/2024	
R 429	Feb 15/2025	
430	Oct 15/2024	
32-21-31		
401	Feb 15/2021	
402	Oct 15/2017	
403	Oct 15/2024	
404	Feb 15/2021	
405	Oct 15/2024	
406	Feb 15/2021	
407	Feb 15/2021	
408	Feb 15/2021	
409	Feb 15/2021	
410	Feb 15/2021	
411	Feb 15/2021	
412	Oct 15/2024	
413	Jun 15/2024	
414	Oct 15/2024	
415	Oct 15/2024	
416	Oct 15/2024	
417	Oct 15/2024	
418	BLANK	
32-21-31		
601	Oct 15/2017	
602	Oct 15/2014	
603	Oct 15/2014	
604	Oct 15/2015	
605	Oct 15/2015	
606	BLANK	
32-21-31		
801	Oct 15/2022	
802	Oct 15/2022	
803	Oct 15/2015	
804	Oct 15/2015	
32-21-37		
201	Feb 15/2020	
202	Feb 15/2020	
32-21-37 (cont)		
203	Feb 15/2020	
204	Oct 15/2018	
205	Oct 15/2018	
206	Oct 15/2018	
207	Oct 15/2018	
208	Oct 15/2018	
32-21-71		
601	Oct 15/2024	
602	Oct 15/2023	
603	Feb 15/2022	
604	Feb 15/2022	
32-22-11		
401	Feb 15/2019	
402	Oct 15/2014	
403	Feb 15/2018	
404	Feb 15/2019	
405	Jun 15/2024	
406	Oct 15/2024	
407	Jun 15/2024	
408	Jun 15/2024	
32-22-11		
501	Feb 15/2021	
502	Feb 15/2021	
503	Feb 15/2021	
504	Feb 15/2021	
505	Feb 15/2021	
506	Feb 15/2023	
507	Feb 15/2021	
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32-31-00		
R 501	Feb 15/2025	
R 502	Feb 15/2025	
R 503	Feb 15/2025	
R 504	Feb 15/2025	
505	Oct 15/2015	
32-31-00 (cont)		
506	Oct 15/2015	
507	Oct 15/2015	
508	Oct 15/2015	
509	Oct 15/2015	
R 510	Feb 15/2025	
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512	Oct 15/2024	
32-31-11		
401	Oct 15/2021	
402	Oct 15/2021	
403	Oct 15/2021	
404	Oct 15/2015	
405	Oct 15/2015	
406	Oct 15/2023	
407	Oct 15/2023	
408	Oct 15/2023	
32-31-21		
401	Oct 15/2017	
402	Oct 15/2017	
403	Oct 15/2015	
404	Jun 15/2016	
405	Oct 15/2014	
406	BLANK	
32-31-22		
401	Oct 15/2021	
402	Oct 15/2021	
403	Oct 15/2021	
404	Oct 15/2021	
405	Oct 15/2021	
406	Oct 15/2021	
407	Oct 15/2021	
408	BLANK	
32-31-22		
501	Oct 15/2017	
502	Oct 15/2017	
503	Feb 15/2016	
504	Jun 15/2016	

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CHAPTER 32
LANDING GEAR

Subject/Page	Date	COC
32-31-22		
601	Feb 15/2021	
602	Feb 15/2021	
603	Feb 15/2021	
604	Feb 15/2021	
32-31-31		
401	Oct 15/2017	
402	Oct 15/2014	
403	Oct 15/2015	
404	Oct 15/2015	
405	Oct 15/2014	
406	BLANK	
32-31-41		
401	Jun 15/2018	
402	Oct 15/2014	
403	Oct 15/2015	
404	Oct 15/2015	
405	Jun 15/2018	
406	Feb 15/2022	
407	Feb 15/2022	
408	BLANK	
32-31-51		
401	Jun 15/2024	
402	Jun 15/2024	
403	Oct 15/2015	
404	Jun 15/2024	
405	Oct 15/2023	
406	Oct 15/2024	
407	Jun 15/2024	
408	Jun 15/2024	
R 409	Feb 15/2025	
410	BLANK	
32-31-51		
601	Oct 15/2017	
602	Oct 15/2015	
32-31-61		
401	Feb 15/2024	
402	Feb 15/2024	
32-31-61 (cont)		
403	Oct 15/2015	
404	Oct 15/2015	
405	Feb 15/2024	
406	Feb 15/2024	
407	Oct 15/2024	
408	Oct 15/2024	
32-31-61		
601	Oct 15/2024	
602	Oct 15/2020	
603	Oct 15/2020	
604	Oct 15/2015	
605	Oct 15/2015	
606	Oct 15/2024	
607	Oct 15/2024	
608	Oct 15/2024	
609	Oct 15/2024	
610	Oct 15/2024	
611	Oct 15/2024	
612	BLANK	
32-31-71		
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402	Oct 15/2021	
403	Oct 15/2021	
404	Oct 15/2021	
405	Jun 15/2023	
406	Jun 15/2023	
407	Feb 15/2023	
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410	Oct 15/2021	
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32-32-00		
501	Oct 15/2023	
502	Oct 15/2017	
503	Oct 15/2017	
504	Oct 15/2023	
32-32-00 (cont)		
505	Oct 15/2023	
506	Oct 15/2023	
507	Oct 15/2023	
508	Oct 15/2023	
509	Oct 15/2015	
510	BLANK	
32-32-11		
R 401	Feb 15/2025	
402	Feb 15/2019	
403	Feb 15/2019	
404	Oct 15/2015	
405	Oct 15/2015	
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407	Oct 15/2015	
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R 409	Feb 15/2025	
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411	Jun 15/2023	
412	Oct 15/2023	
413	Jun 15/2023	
414	Jun 15/2023	
415	Jun 15/2021	
416	BLANK	
32-32-11		
601	Feb 15/2020	
602	Oct 15/2017	
603	Oct 15/2017	
604	Oct 15/2017	
605	Oct 15/2017	
606	Oct 15/2017	
607	Oct 15/2017	
608	Oct 15/2017	
609	Feb 15/2020	
610	Feb 15/2020	
611	Feb 15/2020	
612	BLANK	

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CHAPTER 32
LANDING GEAR

Subject/Page	Date	COC
32-32-21		
401	Feb 15/2021	
402	Feb 15/2021	
403	Feb 15/2021	
404	Oct 15/2024	
405	Feb 15/2021	
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32-32-31		
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402	Oct 15/2023	
403	Jun 15/2021	
404	Jun 15/2021	
405	Jun 15/2021	
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407	Jun 15/2021	
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R 411	Feb 15/2025	
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R 415	Feb 15/2025	
416	Jun 15/2024	
417	Jun 15/2024	
418	Jun 15/2024	
419	Jun 15/2024	
420	BLANK	
32-32-31		
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602	Oct 15/2017	
603	Oct 15/2014	
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605	Oct 15/2015	
606	Oct 15/2015	
607	Oct 15/2015	
608	Oct 15/2015	
32-32-41		
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402	Oct 15/2014	
403	Oct 15/2015	
404	Jun 15/2016	
405	Feb 15/2016	
406	Oct 15/2017	
407	Oct 15/2017	
408	Oct 15/2017	
32-32-51		
401	Oct 15/2017	
402	Oct 15/2017	
403	Oct 15/2015	
404	Jun 15/2016	
405	Oct 15/2015	
406	Jun 15/2024	
407	Jun 15/2024	
408	Jun 15/2024	
409	Oct 15/2017	
410	BLANK	
32-32-52		
401	Oct 15/2017	
402	Feb 15/2019	
403	Feb 15/2016	
404	Jun 15/2016	
405	Feb 15/2016	
406	Feb 15/2016	
407	Feb 15/2016	
408	Oct 15/2024	
409	Jun 15/2023	
410	Jun 15/2023	
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412	Jun 15/2023	
32-32-71		
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402	Oct 15/2014	
403	Jun 15/2016	
404	Feb 15/2016	
32-32-71 (cont)		
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406	Oct 15/2017	
32-32-72		
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402	Jun 15/2022	
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404	Jun 15/2022	
405	Jun 15/2022	
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32-32-91		
401	Jun 15/2020	
402	Jun 15/2020	
403	Oct 15/2015	
404	Oct 15/2015	
R 405	Feb 15/2025	
O 406	Feb 15/2025	
407	Jun 15/2019	
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32-32-93		
R 401	Feb 15/2025	
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403	Oct 15/2015	
404	Oct 15/2015	
R 405	Feb 15/2025	
406	Jun 15/2023	
407	Jun 15/2023	
408	BLANK	
32-33-00		
501	Feb 15/2016	
502	Oct 15/2017	
503	Oct 15/2017	
504	Oct 15/2023	
505	Oct 15/2023	
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507	Oct 15/2023	
508	Oct 15/2023	
509	Oct 15/2023	

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Subject/Page	Date	COC
32-33-00 (cont)		
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402	Feb 15/2023	
403	Jun 15/2017	
404	Oct 15/2015	
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410	Oct 15/2024	
411	Oct 15/2024	
412	Oct 15/2024	
413	Oct 15/2024	
414	Oct 15/2024	
32-33-21		
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402	Apr 15/2022	
403	Oct 15/2015	
404	Feb 15/2016	
405	Apr 15/2022	
406	Apr 15/2022	
407	Apr 15/2022	
408	Apr 15/2022	
32-33-31		
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403	Oct 15/2015	
404	Jun 15/2016	
405	Feb 15/2016	
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407	Oct 15/2017	
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32-33-41		
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32-33-41 (cont)		
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405	Jun 15/2022	
406	Jun 15/2022	
32-33-51		
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403	Oct 15/2017	
404	Oct 15/2017	
405	Oct 15/2017	
406	Oct 15/2017	
407	Oct 15/2017	
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409	Feb 15/2023	
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411	Feb 15/2023	
412	Feb 15/2023	
413	Feb 15/2023	
414	BLANK	
32-33-51		
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602	Feb 15/2021	
603	Feb 15/2021	
604	Feb 15/2021	
605	Oct 15/2015	
606	Oct 15/2015	
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32-33-52		
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32-33-61		
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407	Feb 15/2023	
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503	Jun 15/2021	
504	Feb 15/2021	
505	Feb 15/2021	
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32-33-61		
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602	Oct 15/2017	
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605	Oct 15/2015	
606	Oct 15/2015	
607	Oct 15/2015	
608	Oct 15/2015	
32-33-71		
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402	Oct 15/2017	
403	Jun 15/2016	
404	Oct 15/2024	
405	Oct 15/2022	
406	Oct 15/2022	
407	Oct 15/2020	
408	Oct 15/2024	

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Subject/Page	Date	COC
32-33-71 (cont)		
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32-33-72		
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403	Jun 15/2016	
404	Oct 15/2017	
405	Feb 15/2016	
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503	Oct 15/2023	
504	Oct 15/2015	
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507	Oct 15/2015	
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509	Oct 15/2022	
510	Oct 15/2022	
511	Jun 15/2023	
512	Jun 15/2023	
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522	Jun 15/2024	
523	Oct 15/2024	
524	Oct 15/2024	
32-34-11		
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402	Feb 15/2019	
32-34-11 (cont)		
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404	Oct 15/2015	
405	Oct 15/2015	
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418	Oct 15/2024	
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420	Oct 15/2024	
421	Oct 15/2024	
422	Oct 15/2024	
32-34-21		
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403	Oct 15/2015	
404	Jun 15/2021	
405	Oct 15/2015	
406	Oct 15/2022	
407	Jun 15/2021	
408	Jun 15/2021	
409	Oct 15/2022	
410	Oct 15/2022	
32-34-31		
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402	Feb 15/2015	
403	Oct 15/2015	
404	Oct 15/2015	
405	Oct 15/2015	
32-34-31 (cont)		
406	Oct 15/2019	
407	Oct 15/2015	
408	Oct 15/2015	
409	Oct 15/2015	
410	Feb 15/2015	
32-35-00		
501	Jun 15/2019	
502	Jun 15/2019	
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32-35-11		
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403	Oct 15/2016	
404	Oct 15/2018	
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32-35-20		
401	Oct 15/2014	
402	Oct 15/2015	
403	Oct 15/2015	
404	Oct 15/2014	
32-35-21		
401	Feb 15/2023	
402	Feb 15/2023	

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Subject/Page	Date	COC
32-35-21 (cont)		
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404	Oct 15/2015	
405	Oct 15/2024	
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407	Oct 15/2015	
408	Feb 15/2020	
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410	Feb 15/2023	
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412	Feb 15/2023	
32-41-00		
201	Oct 15/2015	
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203	Oct 15/2022	
204	Oct 15/2022	
R 205	Feb 15/2025	
206	Oct 15/2022	
207	Oct 15/2024	
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R 213	Feb 15/2025	
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R 215	Feb 15/2025	
R 216	Feb 15/2025	
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R 218	Feb 15/2025	
32-41-00		
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32-41-00 (cont)		
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R 516	Feb 15/2025	
517	Jun 15/2022	
518	Feb 15/2023	
519	Feb 15/2023	
520	Feb 15/2023	
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522	BLANK	
32-41-11		
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402	Feb 15/2024	
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404	Feb 15/2024	
405	Jun 15/2024	
406	Oct 15/2024	
R 407	Feb 15/2025	
O 408	Feb 15/2025	
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A 410	BLANK	
32-41-21		
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408	Oct 15/2015	
409	Oct 15/2015	
410	Jun 15/2021	
32-41-21 (cont)		
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412	Feb 15/2021	
413	Jun 15/2021	
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32-41-22		
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R 402	Feb 15/2025	
R 403	Feb 15/2025	
R 404	Feb 15/2025	
R 405	Feb 15/2025	
R 406	Feb 15/2025	
R 407	Feb 15/2025	
R 408	Feb 15/2025	
32-41-31		
401	Jun 15/2023	
402	Oct 15/2024	
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407	Oct 15/2021	
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412	Oct 15/2024	
413	Oct 15/2022	
414	Oct 15/2022	
415	Oct 15/2022	
416	Oct 15/2021	
32-41-41		
R 401	Feb 15/2025	
R 402	Feb 15/2025	
403	Jun 15/2024	
R 404	Feb 15/2025	
R 405	Feb 15/2025	
406	Oct 15/2024	

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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Subject/Page	Date	COC
32-41-41 (cont)		
407	Jun 15/2023	
408	Jun 15/2023	
409	Oct 15/2024	
410	Jun 15/2023	
411	Jun 15/2023	
R 412	Feb 15/2025	
R 413	Feb 15/2025	
R 414	Feb 15/2025	
R 415	Feb 15/2025	
R 416	Feb 15/2025	
R 417	Feb 15/2025	
R 418	Feb 15/2025	
O 419	Feb 15/2025	
R 420	Feb 15/2025	
R 421	Feb 15/2025	
422	BLANK	
32-41-41		
601	Oct 15/2024	
R 602	Feb 15/2025	
R 603	Feb 15/2025	
604	Oct 15/2024	
R 605	Feb 15/2025	
606	Oct 15/2024	
R 607	Feb 15/2025	
R 608	Feb 15/2025	
R 609	Feb 15/2025	
R 610	Feb 15/2025	
R 611	Feb 15/2025	
R 612	Feb 15/2025	
O 613	Feb 15/2025	
614	Oct 15/2024	
R 615	Feb 15/2025	
616	Oct 15/2024	
R 617	Feb 15/2025	
618	Oct 15/2024	
R 619	Feb 15/2025	
32-41-41 (cont)		
R 620	Feb 15/2025	
R 621	Feb 15/2025	
R 622	Feb 15/2025	
R 623	Feb 15/2025	
R 624	Feb 15/2025	
32-41-42		
401	Jun 15/2019	
402	Oct 15/2024	
403	Jun 15/2023	
404	Jun 15/2023	
405	Jun 15/2023	
406	BLANK	
32-41-51		
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402	Apr 15/2022	
403	Jun 15/2021	
404	Jun 15/2021	
405	Jun 15/2021	
406	Jun 15/2021	
407	Oct 15/2024	
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409	Oct 15/2023	
410	Oct 15/2023	
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412	Oct 15/2023	
413	Oct 15/2023	
414	BLANK	
32-41-53		
401	Oct 15/2024	
402	Oct 15/2024	
403	Oct 15/2015	
404	Oct 15/2024	
405	Oct 15/2024	
406	BLANK	
32-41-54		
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402	Oct 15/2015	
32-41-54 (cont)		
403	Oct 15/2017	
404	Oct 15/2017	
32-41-71		
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402	Oct 15/2017	
403	Oct 15/2015	
404	Oct 15/2024	
405	Oct 15/2017	
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32-41-72		
401	Jun 15/2020	
402	Jun 15/2020	
403	Oct 15/2015	
404	Oct 15/2015	
405	Oct 15/2024	
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407	Jun 15/2023	
408	Oct 15/2015	
409	Oct 15/2015	
410	Oct 15/2024	
411	Jun 15/2023	
412	BLANK	
32-41-81		
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402	Feb 15/2022	
403	Jun 15/2022	
404	Oct 15/2015	
405	Oct 15/2021	
406	Oct 15/2015	
407	Oct 15/2015	
408	Oct 15/2015	
409	Oct 15/2022	
410	Jun 15/2022	
411	Jun 15/2022	
412	Jun 15/2022	
413	Oct 15/2015	
414	Oct 15/2015	

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ECCN 9E991 BOEING PROPRIETARY - See title page for details

Subject/Page	Date	COC
32-41-81 (cont)		
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416	Oct 15/2015	
32-41-91		
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402	Oct 15/2017	
403	Oct 15/2015	
404	Oct 15/2015	
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407	Oct 15/2022	
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32-41-93		
401	Oct 15/2023	
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403	Oct 15/2015	
404	Oct 15/2015	
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406	Oct 15/2023	
407	Oct 15/2023	
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R 409	Feb 15/2025	
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32-41-95		
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405	Feb 15/2021	
406	Feb 15/2021	
32-41-96		
R 401	Feb 15/2025	
R 402	Feb 15/2025	
R 403	Feb 15/2025	
R 404	Feb 15/2025	
R 405	Feb 15/2025	
R 406	Feb 15/2025	
32-42-00		
R 501	Feb 15/2025	
O 502	Feb 15/2025	
R 503	Feb 15/2025	
504	Jun 15/2018	
505	Jun 15/2018	
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R 507	Feb 15/2025	
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R 509	Feb 15/2025	
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R 513	Feb 15/2025	
R 514	Feb 15/2025	
R 515	Feb 15/2025	
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R 518	Feb 15/2025	
R 519	Feb 15/2025	
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R 526	Feb 15/2025	
R 527	Feb 15/2025	
R 528	Feb 15/2025	
O 529	Feb 15/2025	
530	BLANK	
32-42-11		
401	Jun 15/2024	
402	Jun 15/2024	
403	Oct 15/2015	
404	Oct 15/2015	
405	Jun 15/2024	
32-42-11 (cont)		
406	Jun 15/2024	
407	Feb 15/2024	
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32-42-21		
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402	Oct 15/2015	
403	Oct 15/2015	
404	Oct 15/2017	
32-42-31		
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402	Oct 15/2024	
403	Oct 15/2024	
404	Oct 15/2024	
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407	Oct 15/2024	
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422	Oct 15/2024	
423	Oct 15/2024	
424	Oct 15/2024	
425	Oct 15/2024	
426	Oct 15/2024	
427	Oct 15/2024	
428	Oct 15/2024	

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Subject/Page	Date	COC
32-42-31 (cont)		
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32-42-51		
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402	Oct 15/2014	
403	Oct 15/2015	
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406	Oct 15/2024	
407	Jun 15/2022	
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32-42-61		
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402	Oct 15/2019	
403	Oct 15/2019	
404	Oct 15/2019	
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407	Oct 15/2019	
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32-42-71		
401	Feb 15/2024	
402	Oct 15/2024	
403	Oct 15/2024	
404	Feb 15/2024	
405	Oct 15/2024	
406	Oct 15/2024	
407	Oct 15/2024	
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409	Oct 15/2024	
410	Feb 15/2024	
411	Feb 15/2024	
412	Oct 15/2024	
413	Feb 15/2024	
414	BLANK	
32-42-81		
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402	Oct 15/2021	
403	Jun 15/2020	
404	Jun 15/2020	
405	Oct 15/2021	
406	Oct 15/2021	
407	Oct 15/2021	
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32-44-00		
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32-44-00 (cont)		
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32-44-11		
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424	Oct 15/2023	
32-44-21		
401	Oct 15/2023	
402	Jun 15/2024	
403	Oct 15/2015	
404	Jun 15/2024	
405	Jun 15/2023	
406	Jun 15/2024	

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Subject/Page	Date	COC
32-44-21 (cont)		
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408	Oct 15/2023	
32-45-00		
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202	Oct 15/2017	
203	Oct 15/2024	
204	Jun 15/2018	
32-45-00		
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R 602	Feb 15/2025	
R 603	Feb 15/2025	
604	Oct 15/2023	
605	Feb 15/2019	
606	Feb 15/2023	
607	Feb 15/2023	
608	Jun 15/2017	
609	Oct 15/2015	
610	Jun 15/2020	
611	Oct 15/2015	
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615	Feb 15/2023	
616	Jun 15/2021	
617	Jun 15/2024	
618	Jun 15/2024	
619	Jun 15/2020	
620	Jun 15/2020	
32-45-08		
401	Jun 15/2024	
402	Jun 15/2024	
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R 405	Feb 15/2025	
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O 407	Feb 15/2025	
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32-45-11		
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R 402	Feb 15/2025	
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R 410	Feb 15/2025	
R 411	Feb 15/2025	
R 412	Feb 15/2025	
413	Feb 15/2024	
414	Oct 15/2024	
415	Feb 15/2024	
416	Feb 15/2024	
32-45-21		
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R 402	Feb 15/2025	
R 403	Feb 15/2025	
R 404	Feb 15/2025	
405	Oct 15/2021	
406	Oct 15/2020	
407	Oct 15/2020	
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R 410	Feb 15/2025	
R 411	Feb 15/2025	
412	Oct 15/2024	
R 413	Feb 15/2025	
414	Oct 15/2024	
32-45-31		
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203	Jun 15/2016	
204	Feb 15/2016	
205	Feb 15/2016	
32-45-31 (cont)		
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32-46-00		
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32-46-21		
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403	Jun 15/2023	
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405	Jun 15/2023	
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32-46-31		
401	Jun 15/2018	
402	Jun 15/2018	
403	Jun 15/2018	
404	Jun 15/2018	
32-51-00		
501	Jun 15/2023	
502	Oct 15/2022	
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510	Oct 15/2024	
511	Oct 15/2024	
512	Oct 15/2024	
513	Oct 15/2024	
514	Jun 15/2023	
515	Oct 15/2023	
516	Jun 15/2023	

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Subject/Page	Date	COC
32-51-00 (cont)		
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519	Jun 15/2023	
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521	Jun 15/2023	
522	Oct 15/2019	
523	Oct 15/2019	
524	Feb 15/2021	
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526	Oct 15/2024	
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528	Feb 15/2021	
529	Oct 15/2024	
530	Oct 15/2024	
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532	Oct 15/2024	
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534	Oct 15/2024	
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536	Oct 15/2023	
537	Oct 15/2024	
538	Feb 15/2024	
O 539	Feb 15/2025	
R 540	Feb 15/2025	
R 541	Feb 15/2025	
R 542	Feb 15/2025	
O 543	Feb 15/2025	
R 544	Feb 15/2025	
R 545	Feb 15/2025	
O 546	Feb 15/2025	
O 547	Feb 15/2025	
O 548	Feb 15/2025	
O 549	Feb 15/2025	
O 550	Feb 15/2025	
O 551	Feb 15/2025	
O 552	Feb 15/2025	
32-51-00 (cont)		
O 553	Feb 15/2025	
O 554	Feb 15/2025	
R 555	Feb 15/2025	
O 556	Feb 15/2025	
O 557	Feb 15/2025	
O 558	Feb 15/2025	
O 559	Feb 15/2025	
O 560	Feb 15/2025	
O 561	Feb 15/2025	
O 562	Feb 15/2025	
O 563	Feb 15/2025	
O 564	Feb 15/2025	
O 565	Feb 15/2025	
O 566	Feb 15/2025	
32-51-00		
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32-51-11		
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32-51-11		
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404	Jun 15/2022	
32-51-11 (cont)		
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421	Jun 15/2022	
422	Jun 15/2022	
423	Jun 15/2022	
424	Jun 15/2022	
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426	BLANK	
32-51-21		
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402	Oct 15/2024	
403	Jun 15/2023	
404	Oct 15/2021	
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411	Oct 15/2021	
412	Oct 15/2021	
413	Oct 15/2021	

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Subject/Page	Date	COC
32-51-21 (cont)		
414	Oct 15/2021	
415	Oct 15/2021	
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32-51-31		
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432	Oct 15/2024	
32-51-31 (cont)		
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32-51-31		
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602	Oct 15/2021	
32-51-41		
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403	Oct 15/2024	
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413	Oct 15/2024	
414	Oct 15/2024	
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32-51-51		
R 401	Feb 15/2025	
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404	Oct 15/2015	
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407	Oct 15/2020	
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417	Feb 15/2024	
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419	Feb 15/2024	
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421	Feb 15/2024	
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32-51-51		
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32-51-52		
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405	Oct 15/2015	
406	Oct 15/2024	
407	Oct 15/2015	

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Subject/Page	Date	COC
32-51-52 (cont)		
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410	Jun 15/2023	
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417	Oct 15/2017	
418	Jun 15/2023	
419	Oct 15/2017	
420	Oct 15/2017	
421	Jun 15/2023	
422	Jun 15/2023	
32-51-61		
R 401	Feb 15/2025	
402	Jun 15/2019	
403	Oct 15/2024	
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406	Feb 15/2019	
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416	Feb 15/2019	
417	Feb 15/2019	
R 418	Feb 15/2025	
419	Oct 15/2021	
420	Oct 15/2021	
32-51-61 (cont)		
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422	Oct 15/2024	
423	Oct 15/2024	
R 424	Feb 15/2025	
425	Oct 15/2021	
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427	Oct 15/2021	
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437	Feb 15/2019	
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441	Feb 15/2019	
R 442	Feb 15/2025	
443	Feb 15/2019	
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445	Feb 15/2019	
446	Oct 15/2024	
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32-51-61		
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32-61-21		
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407	Jun 15/2021	
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32-61-21		
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502	Jun 15/2021	
503	Oct 15/2015	
504	Oct 15/2015	
505	Oct 15/2020	
506	Oct 15/2020	

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507	Oct 15/2020	
508	Jun 15/2021	
509	Jun 15/2021	
510	Jun 15/2021	
511	Jun 15/2021	
512	Oct 15/2021	
513	Oct 15/2021	
514	Oct 15/2021	
515	Oct 15/2021	
516	Jun 15/2021	
32-61-31		
401	Oct 15/2021	
402	Oct 15/2021	
403	Oct 15/2015	
404	Oct 15/2015	
405	Oct 15/2020	
406	Oct 15/2021	
407	Jun 15/2024	
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409	Feb 15/2021	
410	Jun 15/2024	
32-61-31		
501	Feb 15/2020	
502	Oct 15/2015	
503	Oct 15/2015	
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404	Jun 15/2022	
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32-61-41		
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32-61-51		
401	Feb 15/2020	
402	Oct 15/2014	
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404	Oct 15/2020	
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407	Feb 15/2024	
408	Feb 15/2024	
32-61-51		
501	Oct 15/2020	
502	Oct 15/2015	
503	Oct 15/2020	
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506	Oct 15/2021	
507	Oct 15/2021	
508	Oct 15/2021	
32-62-00		
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502	Oct 15/2018	
503	Oct 15/2018	
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505	Oct 15/2018	
506	Oct 15/2019	
32-62-01		
401	Jun 15/2018	
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404	Jun 15/2018	
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32-71-00		
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207	Jun 15/2018	
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209	Jun 15/2020	
210	Feb 15/2023	
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214	Jun 15/2020	
215	Oct 15/2024	
216	Oct 15/2024	
217	Jun 15/2020	
218	Feb 15/2021	
219	Jun 15/2020	
220	Jun 15/2020	
32-71-00		
401	Oct 15/2024	
402	Oct 15/2024	

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403	Oct 15/2024	
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32-71-00 Config 1		
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32-71-00		
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32-71-00		
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R 602	Feb 15/2025	
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610	Jun 15/2018	
32-71-00 (cont)		
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32-71-04		
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32-71-21		
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402	Oct 15/2024	
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404	Oct 15/2024	
405	Oct 15/2024	
406	Oct 15/2024	
32-71-22		
401	Jun 15/2019	
402	Jun 15/2019	
403	Jun 15/2019	
404	Jun 15/2018	
405	Jun 15/2018	
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410	Jun 15/2019	
411	Jun 15/2019	
412	Jun 15/2018	
413	Jun 15/2018	
414	Jun 15/2018	

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LANDING GEAR - MAINTENANCE PRACTICES	32-00-00		201	LOM ALL
Landing Gear - Deactivation TASK 32-00-00-800-801			201	LOM ALL
Landing Gear - Activation TASK 32-00-00-800-802			204	LOM ALL
LANDING GEAR - DDG MAINTENANCE PROCEDURES	32-00-00		901	LOM ALL
MMEL 32-2 (DDPG) Preparation - Antiskid System Inoperative TASK 32-00-00-040-801			902	LOM ALL
MMEL 32-2 (DDPG) Restoration - Antiskid System Inoperative TASK 32-00-00-440-801			903	LOM ALL
MMEL 32-3 (DDPG) Preparation - Parking Brake Valve Inoperative TASK 32-00-00-040-802			904	LOM ALL
MMEL 32-3 (DDPG) Restoration - Parking Brake Valve Inoperative TASK 32-00-00-440-802			906	LOM ALL
MMEL 32-4 (DDPG) Preparation - Parking Brake Light Inoperative TASK 32-00-00-040-803			908	LOM ALL
MMEL 32-4 (DDPG) Restoration - Parking Brake Light Inoperative TASK 32-00-00-440-803			909	LOM ALL
MMEL 32-7 (DDPG) Preparation - Automatic Brake System Inoperative TASK 32-00-00-040-805			910	LOM ALL
MMEL 32-7 (DDPG) Restoration - Automatic Brake System Inoperative TASK 32-00-00-440-805			913	LOM ALL
MMEL 32-8 (DDPG) Preparation - Rudder Pedal Nose Wheel Steering System Inoperative TASK 32-00-00-040-806			914	LOM ALL
MMEL 32-8 (DDPG) Restoration - Rudder Pedal Nose Wheel Steering System Inoperative TASK 32-00-00-440-806			915	LOM ALL

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MMEL 32-10 (DDPG) Preparation - Alternate Antiskid Valves Inoperative TASK 32-00-00-040-807			916	LOM ALL
MMEL 32-10 (DDPG) Restoration - Alternate Antiskid Valves Inoperative TASK 32-00-00-440-807			918	LOM ALL
MMEL 32-12 (DDPG) Preparation - Nose Wheel Steering Switch Inoperative TASK 32-00-00-040-808			918	LOM ALL
MMEL 32-12 (DDPG) Restoration - Nose Wheel Steering Switch Inoperative TASK 32-00-00-440-808			919	LOM ALL
MMEL 32-13 (DDPG) Preparation - Hydraulic Brake Pressure Indicator Inoperative TASK 32-00-00-040-809			920	LOM ALL
MMEL 32-13 (DDPG) Restoration - Hydraulic Brake Pressure Indicator Inoperative TASK 32-00-00-440-809			921	LOM ALL
MMEL 32-15 (DDPG) Preparation - Landing Gear Selector Bypass Valve Inoperative TASK 32-00-00-040-811			922	LOM ALL
MMEL 32-15 (DDPG) Restoration - Landing Gear Selector Bypass Valve Inoperative TASK 32-00-00-440-811			923	LOM ALL
MMEL 32-16 (DDPG) Preparation - Landing Gear Actuation System Inoperative TASK 32-00-00-040-812			924	LOM 411, 426-432, 439, 441, 443, 444, 446, 447, 450-452, 455-457, 461-999
MMEL 32-16 (DDPG) Restoration - Landing Gear Actuation System Inoperative TASK 32-00-00-440-812			925	LOM 411, 426-432, 439, 441, 443, 444, 446, 447, 450-452, 455-457, 461-999
MMEL 32-17-01 (DDPG) Preparation - PSEU Fault TASK 32-00-00-040-815			927	LOM ALL
MMEL 32-17-01 (DDPG) Restoration - PSEU Fault TASK 32-00-00-440-815			928	LOM ALL

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SUBJECT	CHAPTER SECTION SUBJECT	CONF	PAGE	EFFECT
MMEL 32-17-02 (DDPG) Preparation - PSEU Light Inoperative TASK 32-00-00-040-819			928	LOM ALL
MMEL 32-17-02 (DDPG) Restoration - PSEU Light Inoperative TASK 32-00-00-440-818			930	LOM ALL
MMEL 32-18 (DDPG) Preparation - Landing Gear Alternate Extension System Inoperative TASK 32-00-00-040-813			930	LOM 411, 426-432, 439, 441, 443, 444, 446, 447, 450-452, 455-457, 461-999
MMEL 32-18 (DDPG) Restoration - Landing Gear Alternate Extension System Inoperative TASK 32-00-00-440-813			931	LOM 411, 426-432, 439, 441, 443, 444, 446, 447, 450-452, 455-457, 461-999
MMEL 32-19 (DDPG) Preparation - Main Landing Gear Uplock Springs Inoperative TASK 32-00-00-040-814			932	LOM ALL
MMEL 32-19 (DDPG) Restoration - Main Landing Gear Uplock Springs Inoperative TASK 32-00-00-440-814			933	LOM ALL
MMEL 32-20 (DDPG) Preparation - Landing Gear Frangible Fitting Missing or Broken TASK 32-00-00-040-816			934	LOM ALL
MMEL 32-20 (DDPG) Restoration - Landing Gear Frangible Fitting Missing or Broken TASK 32-00-00-440-816			934	LOM ALL
MMEL 32-21 (DDPG) Preparation - Flap Landing Warning Switch S138 Contacts Inoperative TASK 32-00-00-040-817			935	LOM ALL
MMEL 32-21 (DDPG) Restoration - Flap Landing Warning Switch S138 Contacts Inoperative TASK 32-00-00-440-819			938	LOM ALL
MMEL 32-22-01-01A (DDPG) Preparation - Tail Skid Secured in Retracted Position and Inoperative TASK 32-00-00-040-820			941	LOM 465-999
MMEL 32-22-01-01A (DDPG) Restoration - Tail Skid Secured in Retracted Position and Inoperative TASK 32-00-00-440-820			943	LOM 465-999

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MMEL 32-22-01-01B (DDPG) Preparation - Tail Skid Secured in Extended Position and Inoperative TASK 32-00-00-040-821			945	LOM 465-999
MMEL 32-22-01-01B (DDPG) Restoration - Tail Skid Secured in Extended Position and Inoperative TASK 32-00-00-440-821			947	LOM 465-999
MMEL 32-22-01-02 (DDPG) Preparation - Cartridge Core Assembly Inoperative TASK 32-00-00-040-822			949	LOM 465-999
MMEL 32-22-01-02 (DDPG) Restoration - Cartridge Core Assembly Inoperative TASK 32-00-00-440-822			951	LOM 465-999
LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES	32-00-01		201	LOM ALL
Landing Gear Downlock Pins Installation TASK 32-00-01-480-801			201	LOM ALL
Landing Gear Downlock Pins Removal TASK 32-00-01-080-801			212	LOM ALL
LANDING GEAR INNER CYLINDER CHROME - INSPECTION	32-00-10		601	LOM ALL
Landing Gear Inner Cylinder Chrome Inspection TASK 32-00-10-211-801			601	LOM ALL
LANDING GEAR INNER CYLINDER CHROME - CLEANING/PAINTING	32-00-10		701	LOM ALL
Landing Gear Inner Cylinder Chrome Cleaning - with Strut Extended TASK 32-00-10-100-801			701	LOM ALL
Landing Gear Inner Cylinder Chrome Cleaning TASK 32-00-10-100-802			702	LOM ALL
LANDING GEAR INNER CYLINDER CHROME - REPAIR	32-00-10		801	LOM ALL
Landing Gear Inner Cylinder Chrome Repair TASK 32-00-10-300-801			801	LOM ALL

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LANDING GEAR RETRACT/STEERING ACTUATOR CHROME - CLEANING	32-00-11		701	LOM ALL
Main Landing Gear Retract Actuators Chrome Surfaces Cleaning TASK 32-00-11-100-801			701	LOM ALL
Nose Landing Gear Steering Actuators Chrome Surfaces Cleaning TASK 32-00-11-100-802			702	LOM ALL
Nose Landing Gear Retract Actuator Chrome Surfaces Cleaning TASK 32-00-11-100-803			704	LOM ALL
LANDING GEAR - CORROSION PREVENTION	32-00-37		201	LOM ALL
LANDING GEAR - STRUCTURAL INSPECTIONS - MAINTENANCE PRACTICES	32-05-03		201	LOM ALL
INTERNAL - GENERAL VISUAL: LEFT MAIN LANDING GEAR ASSEMBLY TASK 32-05-03-210-801			201	LOM ALL
INTERNAL - GENERAL VISUAL: RIGHT MAIN LANDING GEAR ASSEMBLY TASK 32-05-03-210-802			204	LOM ALL
INTERNAL - GENERAL VISUAL: NOSE LANDING GEAR ASSEMBLY TASK 32-05-03-210-803			207	LOM ALL
AIR/GROUND SYSTEM - MAINTENANCE PRACTICES	32-09-00		201	LOM ALL
Prepare to Put the Airplane in the Air Mode TASK 32-09-00-840-801			201	LOM ALL
Put the Airplane in the Air Mode TASK 32-09-00-860-801			207	LOM ALL
Return the Airplane to the Ground Mode TASK 32-09-00-860-802			213	LOM ALL
Return the Airplane Systems Back to Their Normal On Ground Condition TASK 32-09-00-840-802			216	LOM ALL

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MAIN LANDING GEAR AIR/GROUND SENSOR - REMOVAL/INSTALLATION	32-09-01		401	LOM ALL
Main Landing Gear Air/Ground Sensor Removal TASK 32-09-01-020-801			401	LOM ALL
Main Landing Gear Air/Ground Sensor Installation TASK 32-09-01-400-801			406	LOM ALL
MAIN LANDING GEAR AIR/GROUND SENSOR - ADJUSTMENT/TEST	32-09-01		501	LOM ALL
Main Landing Gear Air/Ground Sensor Clearance Measurement TASK 32-09-01-400-802			501	LOM ALL
Main Landing Gear Air/Ground Sensor Clearance Adjustment TASK 32-09-01-820-801			504	LOM ALL
Main Landing Gear Air/Ground Sensor Operational Test TASK 32-09-01-710-801			506	LOM ALL
NOSE LANDING GEAR AIR/GROUND SENSOR - REMOVAL/INSTALLATION	32-09-02		401	LOM ALL
Nose Landing Gear Air/Ground Sensor Removal TASK 32-09-02-000-801			401	LOM ALL
Nose Landing Gear Air/Ground Sensor Installation TASK 32-09-02-400-802			406	LOM ALL
NOSE LANDING GEAR AIR/GROUND SENSOR - ADJUSTMENT/TEST	32-09-02		501	LOM ALL
Nose Landing Gear Air/Ground Sensor Clearance Measurement TASK 32-09-02-220-801			501	LOM ALL
Nose Landing Gear Air/Ground Sensor Clearance Adjustment TASK 32-09-02-400-801			504	LOM ALL
Nose Landing Gear Air/Ground Sensor Operational Test TASK 32-09-02-710-801			505	LOM ALL

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PROXIMITY SWITCH ELECTRONICS UNIT (PSEU) - REMOVAL/INSTALLATION	32-09-10		401	LOM ALL
Proximity Switch Electronics Unit (PSEU) Removal TASK 32-09-10-000-801			401	LOM ALL
Proximity Switch Electronics Unit (PSEU) Installation TASK 32-09-10-400-801			406	LOM ALL
PROXIMITY SWITCH ELECTRONICS UNIT (PSEU) - ADJUSTMENT/TEST	32-09-10		501	LOM ALL
Proximity Switch Electronics Unit (PSEU) - Operational Test TASK 32-09-10-710-801			501	LOM ALL
Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test TASK 32-09-10-740-801			509	LOM ALL
PSEU Fault Light - Operational Test TASK 32-09-10-710-802			512	LOM ALL
Proximity Switch Electronics Unit Test Using UN-ATE Tool by Technologies Harness Scanner TASK 32-09-10-750-801			514	LOM ALL
PROXIMITY SENSOR - ADJUSTMENT/TEST	32-09-12		501	LOM ALL
PSEU Proximity Sensor - Functional Test with a LCR Meter TASK 32-09-12-700-801			501	LOM ALL
PSEU Proximity Sensor - Functional Test with a Breakout Box and a LCR Meter TASK 32-09-12-700-802			511	LOM ALL
MAIN LANDING GEAR CHARGING VALVE - REMOVAL/INSTALLATION	32-11-00		201	LOM ALL
Main Landing Gear Gas Charging Valve - Removal TASK 32-11-00-000-802			201	LOM ALL
Main Landing Gear Gas Charging Valve - Installation TASK 32-11-00-400-802			204	LOM ALL

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Main Landing Gear Oil Charging Valve Removal TASK 32-11-00-000-803			205	LOM ALL
Main Landing Gear Oil Charging Valve Installation TASK 32-11-00-400-803			211	LOM ALL
MAIN LANDING GEAR - REMOVAL/INSTALLATION	32-11-00		401	LOM ALL
Main Landing Gear Removal TASK 32-11-00-000-801			401	LOM ALL
Main Landing Gear Installation TASK 32-11-00-400-801			429	LOM ALL
MAIN LANDING GEAR - INSPECTION/CHECK	32-11-00		601	LOM ALL
Main Landing Gear Inspection TASK 32-11-00-200-801			601	LOM ALL
MAIN LANDING GEAR SHOCK STRUT SEALS - REPAIRS	32-11-21		801	LOM ALL
Replace the Active Seals with the Spare Seals TASK 32-11-21-960-801			801	LOM ALL
Replace the Active and the Spare Seals TASK 32-11-21-960-802			830	LOM ALL
Replace the Scraper Ring TASK 32-11-21-960-803			851	LOM ALL
Main Landing Gear Shock Strut Seal Leakage Check TASK 32-11-21-200-801			856	LOM ALL
MAIN LANDING GEAR CORROSION PREVENTION - MAINTENANCE PRACTICES	32-11-37		201	LOM ALL
CORROSION PREVENTION TASK 32-11-37-600-801			201	LOM ALL
MAIN LANDING GEAR TORSION LINKS - REMOVAL/INSTALLATION	32-11-51		401	LOM ALL
Main Landing Gear Upper Torsion Link Removal TASK 32-11-51-000-801			401	LOM ALL
Main Landing Gear Lower Torsion Link Removal TASK 32-11-51-000-802			409	LOM ALL
Main Landing Gear Torsion Link Disconnection TASK 32-11-51-020-801			410	LOM ALL

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Main Landing Gear Lower Torsion Link Installation TASK 32-11-51-400-802			416	LOM ALL
Main Landing Gear Torsion Link Connection TASK 32-11-51-400-803			419	LOM ALL
MAIN LANDING GEAR TORSION LINKS - INSPECTION/CHECK	32-11-51		601	LOM ALL
Main Landing Gear Torsion Links Inspection TASK 32-11-51-200-801			601	LOM ALL
MAIN LANDING GEAR SIDE STRUT ASSEMBLY - REMOVAL/INSTALLATION	32-11-61		401	LOM ALL
Main Landing Gear Upper Side Strut Removal TASK 32-11-61-000-801			401	LOM ALL
Main Landing Gear Upper Side Strut Installation TASK 32-11-61-400-801			406	LOM ALL
Main Landing Gear Lower Side Strut Removal TASK 32-11-61-000-802			410	LOM ALL
Main Landing Gear Lower Side Strut Installation TASK 32-11-61-400-802			415	LOM ALL
Main Landing Gear Side Strut Removal TASK 32-11-61-000-803			420	LOM ALL
Main Landing Gear Side Strut Installation TASK 32-11-61-400-803			426	LOM ALL
MAIN LANDING GEAR SIDE STRUT ASSEMBLY - INSPECTION/CHECK	32-11-61		601	LOM ALL
Main Landing Gear Side Strut Assembly Inspection TASK 32-11-61-200-803			601	LOM ALL
MAIN LANDING GEAR SIDE BRACE ASSEMBLY – REMOVAL/INSTALLATION	32-11-62		401	LOM ALL
Main Landing Gear Side Brace Assembly Removal TASK 32-11-62-000-801			401	LOM ALL

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MAIN LANDING GEAR REACTION LINK ASSEMBLY - REMOVAL/INSTALLATION	32-11-71		401	LOM ALL
Main Landing Gear Reaction Link Assembly Removal TASK 32-11-71-000-801			401	LOM ALL
Main Landing Gear Reaction Link Assembly Installation TASK 32-11-71-420-801			412	LOM ALL
MAIN LANDING GEAR HYDRAULIC SHIMMY DAMPER COMPONENTS - REMOVAL/INSTALLATION	32-11-81		201	LOM ALL
Main Landing Gear Shimmy Damper Compensator Removal TASK 32-11-81-000-803			201	LOM ALL
Main Landing Gear Shimmy Damper Compensator Installation TASK 32-11-81-400-802			206	LOM ALL
Main Landing Gear Shimmy Damper Manifold Assembly Removal TASK 32-11-81-000-804			207	LOM ALL
Main Landing Gear Shimmy Damper Manifold Assembly Installation TASK 32-11-81-400-803			208	LOM ALL
Main Landing Gear Shimmy Damper End Gland Assembly Removal TASK 32-11-81-000-805			210	LOM ALL
Main Landing Gear Shimmy Damper End Gland Assembly Installation TASK 32-11-81-400-804			211	LOM ALL
MAIN LANDING GEAR HYDRAULIC SHIMMY DAMPER - REMOVAL/INSTALLATION	32-11-81		401	LOM ALL
Main Landing Gear Shimmy Damper Removal TASK 32-11-81-000-801			401	LOM ALL
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MAIN LANDING GEAR SHIMMY DAMPER AND TORSION LINK APEX ASSEMBLY - INSPECTION/CHECK	32-11-81		601	LOM ALL
Main Landing Gear Hydraulic Shimmy Damper and Torsion Link Assembly Inspection TASK 32-11-81-200-801			601	LOM ALL
MAIN LANDING GEAR FORWARD TRUNNION BEARING ASSEMBLY - REMOVAL/INSTALLATION	32-11-83		401	LOM ALL
Main Landing Gear Forward Trunnion Bearing Assembly Removal TASK 32-11-83-000-801			401	LOM ALL
Main Landing Gear Forward Trunnion Bearing Assembly Installation TASK 32-11-83-400-801			405	LOM ALL
MAIN LANDING GEAR AXLE - REMOVAL/INSTALLATION	32-11-85		401	LOM ALL
Main Landing Gear Axle Removal TASK 32-11-85-000-801			401	LOM ALL
Main Landing Gear Axle Installation TASK 32-11-85-420-801			409	LOM ALL
Main Landing Gear Axle Sleeve Removal TASK 32-11-85-000-802			413	LOM ALL
Main Landing Gear Axle Sleeve Installation TASK 32-11-85-420-802			414	LOM ALL
Main Landing Gear Brake Sleeve Removal TASK 32-11-85-000-803			417	LOM ALL
Main Landing Gear Brake Sleeve Installation TASK 32-11-85-420-803			418	LOM ALL
MAIN LANDING GEAR AXLE - REPAIRS	32-11-85		801	LOM ALL
Main Landing Gear Axle Repair TASK 32-11-85-300-801			801	LOM ALL

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Repair of the Axle Sleeve of the Main Landing Gear TASK 32-11-85-300-802			806	LOM ALL
Repair of the Brake Sleeve of the Main Landing Gear TASK 32-11-85-300-803			806	LOM ALL
MAIN LANDING GEAR DOWNLOCK STRUT - REMOVAL/INSTALLATION	32-11-89		401	LOM ALL
Main Landing Gear Downlock Strut Removal TASK 32-11-89-000-801			401	LOM ALL
Main Landing Gear Downlock Strut Installation TASK 32-11-89-420-801			407	LOM ALL
MAIN LANDING GEAR WHEEL WELL BLADE SEAL - REMOVAL/INSTALLATION	32-12-12		401	LOM ALL
Main Landing Gear Wheel Well Blade Seal Removal TASK 32-12-12-000-801			401	LOM ALL
Main Landing Gear Wheel Well Blade Seal Installation TASK 32-12-12-400-801			406	LOM ALL
MAIN LANDING GEAR WHEEL WELL BLADE SEAL - INSPECTION/CHECK	32-12-12		601	LOM ALL
Main Landing Gear Wheel Well Blade Seal Inspection TASK 32-12-12-200-801			601	LOM ALL
MAIN LANDING GEAR SHOCK STRUT DOORS - REMOVAL/INSTALLATION	32-13-11		401	LOM ALL
Main Landing Gear Center Door Removal TASK 32-13-11-000-802			401	LOM ALL
Main Landing Gear Center Door Installation TASK 32-13-11-420-802			419	LOM ALL
Main Landing Gear Inner Door Removal TASK 32-13-11-000-804			424	LOM ALL
Main Landing Gear Inner Door Installation TASK 32-13-11-420-804			426	LOM ALL

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Main Landing Gear Door Assembly Removal TASK 32-13-11-000-803			430	LOM ALL
Main Landing Gear Door Assembly Installation TASK 32-13-11-420-803			433	LOM ALL
MAIN LANDING GEAR SHOCK STRUT DOOR - ADJUSTMENT/TEST	32-13-11		501	LOM ALL
Main Landing Gear Shock Strut Door Adjustment TASK 32-13-11-820-801			501	LOM ALL
MAIN LANDING GEAR WING DOOR - REMOVAL/INSTALLATION	32-13-21		401	LOM ALL
Main Landing Gear Wing Door Removal TASK 32-13-21-000-802			401	LOM ALL
Main Landing Gear Wing Door Installation TASK 32-13-21-420-801			406	LOM ALL
MAIN LANDING GEAR WING DOOR - ADJUSTMENT/TEST	32-13-21		501	LOM ALL
Main Landing Gear Wing Door Adjustment TASK 32-13-21-000-801			501	LOM ALL
NOSE LANDING GEAR CHARGING VALVE - REMOVAL/INSTALLATION	32-21-00		201	LOM ALL
Nose Landing Gear Gas Charging Valve - Removal TASK 32-21-00-000-802			201	LOM ALL
Nose Landing Gear Gas Charging Valve - Installation TASK 32-21-00-400-802			204	LOM ALL
Nose Landing Gear Oil Charging Valve Removal TASK 32-21-00-000-803			205	LOM ALL
Nose Landing Gear Oil Charging Valve Installation TASK 32-21-00-400-803			209	LOM ALL
NOSE LANDING GEAR - REMOVAL/INSTALLATION	32-21-00		401	LOM ALL
Nose Landing Gear - Removal TASK 32-21-00-000-801			401	LOM ALL
Nose Landing Gear - Installation TASK 32-21-00-400-801			422	LOM ALL

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NOSE LANDING GEAR - INSPECTION/CHECK	32-21-00		601	LOM ALL
Nose Landing Gear Inspection TASK 32-21-00-200-801			601	LOM ALL
Nose Landing Gear Torsional Freeplay Inspection TASK 32-21-00-700-801			607	LOM ALL
NOSE LANDING GEAR - REPAIRS	32-21-00		801	LOM ALL
Repair of the Flexible Conduit on the Nose Landing Gear TASK 32-21-00-300-801			801	LOM ALL
NOSE LANDING GEAR SHOCK STRUT SEALS - REPAIRS	32-21-11		801	LOM ALL
Replace the Active Static Seals and the Active Dynamic Seals with the Spare Seals TASK 32-21-11-960-801			801	LOM ALL
Replace the Active Seals and Spare Seals TASK 32-21-11-960-802			829	LOM ALL
Scraper Ring Replacement TASK 32-21-11-960-803			848	LOM ALL
Nose Landing Gear Shock Strut Seal Leakage Check TASK 32-21-11-200-801			852	LOM ALL
NOSE LANDING GEAR TOW FITTING - REMOVAL/INSTALLATION	32-21-14		401	LOM ALL
Nose Landing Gear Tow Fitting Removal TASK 32-21-14-000-801			401	LOM ALL
Nose Landing Gear Tow Fitting Installation TASK 32-21-14-400-801			403	LOM ALL
NOSE LANDING GEAR DRAG STRUT - REMOVAL/INSTALLATION	32-21-21		401	LOM ALL
Nose Landing Gear Drag Strut Removal TASK 32-21-21-000-801			401	LOM ALL
Nose Landing Gear Drag Strut Installation TASK 32-21-21-400-801			413	LOM ALL

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NOSE LANDING GEAR DRAG STRUT - INSPECTION/CHECK	32-21-21		601	LOM ALL
Nose Landing Gear Drag Strut Inspection TASK 32-21-21-200-801			601	LOM ALL
NLG SHOCK STRUT INNER CYLINDER - REMOVAL/INSTALLATION	32-21-24		401	LOM ALL
NLG Inner Cylinder Removal TASK 32-21-24-000-801			401	LOM ALL
NLG Inner Cylinder Installation TASK 32-21-24-400-801			424	LOM ALL
NOSE LANDING GEAR TORSION LINKS - REMOVAL/INSTALLATION	32-21-31		401	LOM ALL
Nose Landing Gear Upper Torsion Link Removal TASK 32-21-31-000-801			401	LOM ALL
Nose Landing Gear Upper Torsion Link Installation TASK 32-21-31-400-801			408	LOM ALL
Nose Landing Gear Lower Torsion Link Removal TASK 32-21-31-000-802			411	LOM ALL
Nose Landing Gear Lower Torsion Link Installation TASK 32-21-31-400-802			412	LOM ALL
Nose Landing Gear Torsion Link Disconnection TASK 32-21-31-000-803			415	LOM ALL
Nose Landing Gear Torsion Link Connection TASK 32-21-31-400-803			416	LOM ALL
NOSE LANDING GEAR TORSION LINKS - INSPECTION/CHECK	32-21-31		601	LOM ALL
Nose Landing Gear Torsion Links Inspection TASK 32-21-31-200-801			601	LOM ALL
NOSE LANDING GEAR LOWER TORSION LINK - REPAIR	32-21-31		801	LOM ALL
Nose Landing Gear Lower Torsion Link - Repair TASK 32-21-31-350-801			801	LOM ALL

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NOSE LANDING GEAR CORROSION PREVENTION - MAINTENANCE PRACTICES	32-21-37		201	LOM ALL
CORROSION PREVENTION TASK 32-21-37-600-801			201	LOM ALL
NOSE LANDING GEAR AXLE - INSPECTION/CHECK	32-21-71		601	LOM ALL
Nose Gear Axle Detailed Inspection for Corrosion TASK 32-21-71-200-803			601	LOM ALL
NOSE LANDING GEAR WHEEL WELL DOORS - REMOVAL/INSTALLATION	32-22-11		401	LOM ALL
Nose Landing Gear Wheel Well Doors Removal TASK 32-22-11-000-801			401	LOM ALL
Nose Landing Gear Wheel Well Doors Installation TASK 32-22-11-400-801			405	LOM ALL
NOSE LANDING GEAR WHEEL WELL DOORS - ADJUSTMENT/TEST	32-22-11		501	LOM ALL
Nose Landing Gear Wheel Well Doors Adjustment TASK 32-22-11-000-802			501	LOM ALL
LANDING GEAR CONTROL SYSTEM - ADJUSTMENT/TEST	32-31-00		501	LOM ALL
Landing Gear Control System Adjustment TASK 32-31-00-820-801			501	LOM ALL
System Test - Landing Gear Control System TASK 32-31-00-730-802			510	LOM ALL
LANDING GEAR CONTROL LEVER MODULE - REMOVAL/INSTALLATION	32-31-11		401	LOM ALL
Landing Gear Control Lever Module Removal TASK 32-31-11-020-801			401	LOM ALL
Landing Gear Control Lever Module Installation TASK 32-31-11-400-801			406	LOM ALL
LANDING GEAR FORWARD QUADRANT HOUSING ASSEMBLY - REMOVAL/INSTALLATION	32-31-21		401	LOM ALL
Landing Gear Forward Quadrant Housing Assembly Removal TASK 32-31-21-020-801			401	LOM ALL

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Landing Gear Forward Quadrant Housing Assembly Installation TASK 32-31-21-400-801			405	LOM ALL
PUSH/PULL CABLE AND GEARBOX - REMOVAL/INSTALLATION	32-31-22		401	LOM ALL
Push/Pull Cable and Gearbox Removal TASK 32-31-22-020-802			401	LOM ALL
Push/Pull Cable and Gearbox Installation TASK 32-31-22-400-801			405	LOM ALL
PUSH/PULL CABLE AND GEARBOX - ADJUSTMENT/TEST	32-31-22		501	LOM ALL
Push/Pull Cable and Gearbox Adjustment TASK 32-31-22-020-801			501	LOM ALL
PUSH/PULL CABLE - INSPECTION/CHECK	32-31-22		601	LOM ALL
Push Pull Cable Inspection TASK 32-31-22-211-801			601	LOM ALL
Push/Pull Cable Inspection - Forward Quadrant TASK 32-31-22-211-802			603	LOM ALL
LANDING GEAR CONTROL LEVER LOCK SOLENOID - REMOVAL/INSTALLATION	32-31-31		401	LOM ALL
Landing Gear Control Lever Lock Solenoid Removal TASK 32-31-31-020-801			401	LOM ALL
Landing Gear Control Lever Lock Solenoid Installation TASK 32-31-31-400-801			405	LOM ALL
LANDING GEAR CONTROL CABLES - REMOVAL/INSTALLATION	32-31-41		401	LOM ALL
Landing Gear Control Cable Removal TASK 32-31-41-020-801			401	LOM ALL
Landing Gear Control Cable Installation TASK 32-31-41-400-801			406	LOM ALL
LANDING GEAR SELECTOR VALVE - REMOVAL/INSTALLATION	32-31-51		401	LOM ALL
Landing Gear Selector Valve Removal TASK 32-31-51-020-801			401	LOM ALL

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Landing Gear Selector Valve Installation TASK 32-31-51-400-801			405	LOM ALL
LANDING GEAR SELECTOR VALVE - INSPECTION/CHECK	32-31-51		601	LOM ALL
Landing Gear Selector Valve Inspection TASK 32-31-51-200-801			601	LOM ALL
LANDING GEAR SELECTOR VALVE QUADRANT - REMOVAL/INSTALLATION	32-31-61		401	LOM ALL
Landing Gear Selector Valve Quadrant Removal TASK 32-31-61-020-801			401	LOM ALL
Landing Gear Selector Valve Quadrant Installation TASK 32-31-61-400-801			407	LOM ALL
LANDING GEAR SELECTOR VALVE QUADRANT - INSPECTION/CHECK	32-31-61		601	LOM ALL
Landing Gear Selector Valve Quadrant Inspection TASK 32-31-61-200-801			601	LOM ALL
Landing Gear Selector Valve Quadrant Clearance Inspection TASK 32-31-61-200-802			606	LOM 402, 406, 407, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 416, 420 POST SB 737-32-1422
LANDING GEAR TRANSFER VALVE - REMOVAL/INSTALLATION	32-31-71		401	LOM ALL
Landing Gear Transfer Valve Removal TASK 32-31-71-020-801			401	LOM ALL
Landing Gear Transfer Valve Installation TASK 32-31-71-400-801			405	LOM ALL
Operational Test of the Transfer Valve TASK 32-31-71-400-802			408	LOM ALL
MAIN GEAR EXTENSION AND RETRACTION - ADJUSTMENT/TEST	32-32-00		501	LOM ALL
Main Landing Gear Test - Component Replacement TASK 32-32-00-710-802			501	LOM ALL
Main Landing Gear Operational Test TASK 32-32-00-710-801			504	LOM ALL

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MAIN GEAR ACTUATOR ASSEMBLY - REMOVAL/INSTALLATION	32-32-11		401	LOM ALL
Removal of the Actuator Assembly for the Main Gear TASK 32-32-11-000-801			401	LOM ALL
Installation of the Actuator Assembly for the Main Gear TASK 32-32-11-400-801			409	LOM ALL
MAIN GEAR ACTUATOR ASSEMBLY - INSPECTION/CHECK	32-32-11		601	LOM ALL
Main Gear Actuator Assembly Inspection TASK 32-32-11-200-801			601	LOM ALL
Main Gear Actuator Assembly Internal Leakage Check TASK 32-32-11-200-802			609	LOM 402, 404, 406 PRE SB 737-32-1369
MAIN GEAR RETRACT PRESSURE FUSES - REMOVAL/INSTALLATION	32-32-21		401	LOM ALL
Removal of the Retract Pressure Fuses for the Main Gear TASK 32-32-21-000-801			401	LOM ALL
Installation of the Retract Pressure Fuses for the Main Gear TASK 32-32-21-400-801			404	LOM ALL
MAIN GEAR UPLOCK ASSEMBLY - REMOVAL/INSTALLATION	32-32-31		401	LOM ALL
Main Gear Uplock Assembly Removal TASK 32-32-31-000-801			401	LOM ALL
Main Gear Uplock Assembly Installation TASK 32-32-31-400-801			411	LOM ALL
MAIN LANDING GEAR UPLOCK ASSEMBLY - INSPECTION/CHECK	32-32-31		601	LOM ALL
Main Landing Gear Uplock Assembly Inspection TASK 32-32-31-200-801			601	LOM ALL

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MAIN GEAR UPLOCK ACTUATOR - REMOVAL/INSTALLATION	32-32-41		401	LOM ALL
Main Gear Uplock Actuator Removal TASK 32-32-41-000-801			401	LOM ALL
Main Gear Uplock Actuator Installation TASK 32-32-41-400-801			405	LOM ALL
MAIN GEAR DOWNLOCK ACTUATOR - REMOVAL/INSTALLATION	32-32-51		401	LOM ALL
Main Gear Downlock Actuator Removal TASK 32-32-51-000-801			401	LOM ALL
Main Gear Downlock Actuator Installation TASK 32-32-51-400-801			406	LOM ALL
MAIN GEAR FRANGIBLE FITTING ASSEMBLY - REMOVAL/INSTALLATION	32-32-52		401	LOM ALL
Main Gear Frangible Fitting Assembly Removal TASK 32-32-52-000-801			401	LOM ALL
Main Gear Frangible Fitting Assembly Installation TASK 32-32-52-400-802			408	LOM ALL
Main Gear Frangible Fitting Removal TASK 32-32-52-000-802			410	LOM ALL
Main Gear Frangible Fitting Installation TASK 32-32-52-400-803			411	LOM ALL
MAIN GEAR TRANSFER CYLINDER - REMOVAL/INSTALLATION	32-32-71		401	LOM ALL
Main Gear Transfer Cylinder Removal TASK 32-32-71-000-801			401	LOM ALL
Main Gear Transfer Cylinder Installation TASK 32-32-71-400-801			404	LOM ALL
MAIN LANDING GEAR HYDRAULIC FLOW REGULATOR - REMOVAL/INSTALLATION	32-32-72		401	LOM ALL
Removal of the Hydraulic Flow Regulator for the Main Gear TASK 32-32-72-000-801			401	LOM ALL
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Main Gear Downlock Springs Removal TASK 32-32-91-000-801			401	LOM ALL
Main Gear Downlock Spring Installation TASK 32-32-91-400-801			405	LOM ALL
MAIN GEAR BEAM HANGER PIN - REMOVAL/INSTALLATION	32-32-93		401	LOM ALL
Main Gear Beam Hanger Pin Removal TASK 32-32-93-000-801			401	LOM ALL
Main Gear Beam Hanger Pin Installation TASK 32-32-93-400-801			405	LOM ALL
NOSE GEAR EXTENSION AND RETRACTION - ADJUSTMENT/TEST	32-33-00		501	LOM ALL
Nose Landing Gear Test - Component Replacement TASK 32-33-00-710-802			501	LOM ALL
Operational Test for the Nose Landing Gear TASK 32-33-00-710-801			504	LOM ALL
NOSE GEAR RETRACT ACTUATOR - REMOVAL/INSTALLATION	32-33-11		401	LOM ALL
Nose Gear Retract Actuator Removal TASK 32-33-11-000-801			401	LOM ALL
Nose Gear Retract Actuator Installation TASK 32-33-11-400-801			409	LOM ALL
NOSE GEAR LOCK ACTUATOR - REMOVAL/INSTALLATION	32-33-21		401	LOM ALL
Nose Landing Gear Lock Actuator Removal TASK 32-33-21-000-801			401	LOM ALL
Nose Landing Gear Lock Actuator Installation TASK 32-33-21-400-801			405	LOM ALL
NOSE GEAR LOCK VALVE MANIFOLD - REMOVAL/INSTALLATION	32-33-31		401	LOM ALL
Nose Gear Lock Valve Manifold Removal TASK 32-33-31-000-801			401	LOM ALL

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NOSE GEAR TRANSFER CYLINDER - REMOVAL/INSTALLATION	32-33-41		401	LOM ALL
Nose Gear Transfer Cylinder Removal TASK 32-33-41-000-801			401	LOM ALL
Nose Gear Transfer Cylinder Installation TASK 32-33-41-400-801			404	LOM ALL
NOSE GEAR LOCK MECHANISM - REMOVAL/INSTALLATION	32-33-51		401	LOM ALL
Nose Landing Gear Lock Mechanism Removal TASK 32-33-51-000-801			401	LOM ALL
Nose Gear Lock Mechanism Installation TASK 32-33-51-400-801			408	LOM ALL
NOSE GEAR LOCK MECHANISM - INSPECTION/CHECK	32-33-51		601	LOM ALL
Nose Gear Lock Mechanism Inspection TASK 32-33-51-200-801			601	LOM ALL
NOSE GEAR LOCK SPRING - REMOVAL/INSTALLATION	32-33-52		401	LOM ALL
Nose Gear Lock Spring Removal TASK 32-33-52-000-801			401	LOM ALL
Nose Gear Lock Spring Installation TASK 32-33-52-400-801			404	LOM ALL
NOSE GEAR WHEEL WELL DOOR LINKAGE - REMOVAL/INSTALLATION	32-33-61		401	LOM ALL
Nose Gear Wheel Well Door Linkage Removal TASK 32-33-61-000-801			401	LOM ALL
Nose Gear Wheel Well Door Linkage Installation TASK 32-33-61-400-801			407	LOM ALL
NOSE GEAR WHEEL WELL DOOR LINKAGE - ADJUSTMENT/TEST	32-33-61		501	LOM ALL
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NOSE GEAR WHEEL WELL DOOR LINKAGE - INSPECTION/CHECK	32-33-61		601	LOM ALL
Nose Gear Wheel Well Door Linkage Inspection TASK 32-33-61-200-801			601	LOM ALL
NOSE GEAR PRESSURE FUSE - REMOVAL/INSTALLATION	32-33-71		401	LOM ALL
Removal of the Retract Pressure Fuse for the Nose Gear TASK 32-33-71-000-801			401	LOM ALL
Installation of the Retract Pressure Fuse for the Nose Gear TASK 32-33-71-400-801			404	LOM ALL
Removal of the Extend Pressure Fuse for the Nose Gear TASK 32-33-71-000-803			405	LOM ALL
Installation of the Extend Pressure Fuse for the Nose Gear TASK 32-33-71-400-802			408	LOM ALL
NOSE GEAR HYDRAULIC FLOW REGULATOR - REMOVAL/INSTALLATION	32-33-72		401	LOM ALL
Removal of the Hydraulic Flow Regulator for the Nose Gear TASK 32-33-72-000-801			401	LOM ALL
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MAIN GEAR MANUAL EXTENSION SYSTEM - ADJUSTMENT/TEST	32-34-00		501	LOM ALL
Main Landing Gear Manual Extension System Adjustment and Test TASK 32-34-00-820-801			501	LOM ALL
Main Gear Manual Extension System Test - Airplane on Jacks TASK 32-34-00-730-801			508	LOM ALL
Main Gear Manual Extension System Test - Airplane not on Jacks TASK 32-34-00-730-802			517	LOM ALL

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Manual Extension System Access Door Switch Adjustment TASK 32-34-00-820-802			519	LOM ALL
MAIN GEAR MANUAL EXTENSION CONTROL MECHANISM - REMOVAL/INSTALLATION	32-34-11		401	LOM ALL
Main Gear Manual Extension Control Mechanism Removal TASK 32-34-11-000-801			401	LOM ALL
Main Gear Manual Extension Control Mechanism Installation TASK 32-34-11-400-801			412	LOM ALL
Removal of the Manual Extension System Access Door Switch TASK 32-34-11-820-801			414	LOM ALL
Installation of the Manual Extension System Access Door Switch TASK 32-34-11-820-802			421	LOM ALL
MAIN GEAR MANUAL EXTENSION MECHANISM - REMOVAL/INSTALLATION	32-34-21		401	LOM ALL
Removal of the Manual Extension Mechanism for the Main Gear TASK 32-34-21-000-801			401	LOM ALL
Installation of the Manual Extension Mechanism for the Main Gear TASK 32-34-21-400-801			408	LOM ALL
MAIN GEAR MANUAL EXTENSION SYSTEM CABLES - REMOVAL/INSTALLATION	32-34-31		401	LOM ALL
Main Gear Manual Extension System Cables Removal TASK 32-34-31-000-801			401	LOM ALL
Main Gear Manual Extension System Cables Installation TASK 32-34-31-400-801			409	LOM ALL
NOSE GEAR MANUAL EXTENSION SYSTEM - ADJUSTMENT/TEST	32-35-00		501	LOM ALL
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Nose Gear Manual Extension System Test - Airplane Not on Jacks TASK 32-35-00-730-802			513	LOM ALL
NOSE GEAR MANUAL EXTENSION RELEASE MECHANISM - REMOVAL/INSTALLATION	32-35-11		401	LOM ALL
Nose Gear Manual Extension Release Mechanism Removal TASK 32-35-11-000-801			401	LOM ALL
Nose Gear Manual Extension Release Mechanism Installation TASK 32-35-11-400-801			404	LOM ALL
NOSE GEAR MANUAL EXTENSION SPRING - REMOVAL/INSTALLATION	32-35-20		401	LOM ALL
Nose Gear Manual Extension Spring Removal TASK 32-35-20-000-801			401	LOM ALL
Nose Gear Manual Extension Spring Installation TASK 32-35-20-400-801			404	LOM ALL
NOSE GEAR MANUAL EXTENSION SYSTEM CABLES - REMOVAL/INSTALLATION	32-35-21		401	LOM ALL
Nose Gear Manual Extension System Cables Removal TASK 32-35-21-000-801			401	LOM ALL
Nose Gear Manual Extension System Cables Installation TASK 32-35-21-400-801			410	LOM ALL
HYDRAULIC BRAKE SYSTEM - MAINTENANCE PRACTICES	32-41-00		201	LOM ALL
Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves TASK 32-41-00-870-801			201	LOM ALL
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Alternate (System A) Hydraulic System Brake Fuse Test TASK 32-41-00-870-805			216	LOM ALL
HYDRAULIC BRAKE SYSTEM - ADJUSTMENT/TEST	32-41-00		501	LOM ALL
Hydraulic Brake System - Adjustment TASK 32-41-00-820-801			501	LOM ALL
Normal and Alternate Brake Application - Functional Test TASK 32-41-00-710-801			514	LOM ALL
Gear Retract Braking - Operational Test TASK 32-41-00-710-802			517	LOM ALL
Accumulator - Operational Test TASK 32-41-00-720-801			518	LOM ALL
Alternate Brake System - Operational Test TASK 32-41-00-710-803			520	LOM ALL
BRAKE DISCONNECT - REMOVAL/INSTALLATION	32-41-11		401	LOM ALL
Brake Disconnect Removal TASK 32-41-11-000-801			401	LOM ALL
Brake Disconnect Installation TASK 32-41-11-400-801			406	LOM ALL
BRAKE METERING VALVE CONTROL QUADRANT - REMOVAL/INSTALLATION	32-41-21		401	LOM ALL
Brake Metering Valve Control Quadrant Removal TASK 32-41-21-000-801			401	LOM ALL
Brake Metering Valve Control Quadrant Installation TASK 32-41-21-400-801			410	LOM ALL

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Brake Pedal Bus Crank Assembly Removal TASK 32-41-22-000-801			401	LOM ALL
Brake Pedal Bus Crank Assembly Installation TASK 32-41-22-400-801			406	LOM ALL
BRAKE METERING VALVE ASSEMBLY - REMOVAL/INSTALLATION	32-41-31		401	LOM ALL
Brake Metering Valve Removal TASK 32-41-31-000-801			401	LOM ALL
Brake Metering Valve Installation TASK 32-41-31-400-801			410	LOM ALL
Brake Metering Valve Visual Inspection TASK 32-41-31-000-802			415	LOM ALL
MAIN LANDING GEAR BRAKE - REMOVAL/INSTALLATION	32-41-41		401	LOM ALL
Main Landing Gear Brake Removal TASK 32-41-41-000-801			401	LOM ALL
Main Landing Gear Brake Installation TASK 32-41-41-400-801			415	LOM ALL
MAIN LANDING GEAR BRAKE - INSPECTION/CHECK	32-41-41		601	LOM ALL
Examine the Brakes for Wear TASK 32-41-41-700-801			601	LOM ALL
Main Landing Gear Brake Fast Check (Wheel Installed on the Airplane) TASK 32-41-41-700-802			607	LOM ALL
Main Landing Gear Brake Check (Wheel Removed from the Airplane) TASK 32-41-41-700-803			610	LOM ALL
MAIN LANDING GEAR BRAKE SLEEVE - REMOVAL/INSTALLATION	32-41-42		401	LOM ALL
Main Landing Gear Brake Sleeve Removal TASK 32-41-42-000-801			401	LOM ALL
Main Landing Gear Brake Sleeve Installation TASK 32-41-42-420-801			404	LOM ALL

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Hydraulic Brake Accumulator Installation TASK 32-41-51-420-801			407	LOM ALL
Brake Accumulator Pressure Gage Removal TASK 32-41-51-000-803			409	LOM ALL
Brake Accumulator Pressure Gage Installation TASK 32-41-51-420-802			411	LOM ALL
BRAKE ACCUMULATOR PRESSURE TRANSMITTER - REMOVAL/INSTALLATION	32-41-53		401	LOM ALL
Brake Accumulator Pressure Transmitter Removal TASK 32-41-53-000-801			401	LOM ALL
Brake Accumulator Pressure Transmitter Installation TASK 32-41-53-400-801			404	LOM ALL
BRAKE ACCUMULATOR PRESSURE GAGE (FLIGHT COMPARTMENT) - REMOVAL/INSTALLATION	32-41-54		401	LOM ALL
Brake Accumulator Pressure Gage (Flight Compartment) Removal TASK 32-41-54-000-801			401	LOM ALL
Brake Accumulator Pressure Gage (Flight Compartment) Installation TASK 32-41-54-400-801			403	LOM ALL
BRAKE ACCUMULATOR PRESSURE RELIEF VALVE - REMOVAL/INSTALLATION	32-41-71		401	LOM ALL
Brake Accumulator Pressure Relief Valve Removal TASK 32-41-71-000-801			401	LOM ALL
Brake Accumulator Pressure Relief Valve Installation TASK 32-41-71-420-801			404	LOM ALL

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BRAKE HYDRAULIC FUSES - REMOVAL/INSTALLATION	32-41-72		401	LOM ALL
Brake Hydraulic Fuse (Alternate Brake System) - Removal TASK 32-41-72-020-801			401	LOM ALL
Brake Hydraulic Fuse (Alternate Brake System) - Installation TASK 32-41-72-420-801			405	LOM ALL
Brake Hydraulic Fuse (Normal Brake System) - Removal TASK 32-41-72-000-801			406	LOM ALL
Brake Hydraulic Fuse (Normal Brake System) - Installation TASK 32-41-72-400-801			410	LOM ALL
HYDRAULIC BRAKE CONTROL CABLE - REMOVAL/INSTALLATION	32-41-81		401	LOM ALL
Hydraulic Brake Control Cable Removal TASK 32-41-81-000-801			401	LOM ALL
Hydraulic Brake Control Cable Installation TASK 32-41-81-400-801			409	LOM ALL
Brake Control System Visual Inspection TASK 32-41-81-000-802			411	LOM ALL
BRAKE ACCUMULATOR ISOLATION VALVE - REMOVAL/INSTALLATION	32-41-91		401	LOM ALL
Accumulator Isolation Valve Removal TASK 32-41-91-000-801			401	LOM ALL
Accumulator Isolation Valve Installation TASK 32-41-91-420-801			405	LOM ALL
ALTERNATE BRAKE SELECTOR VALVE - REMOVAL/INSTALLATION	32-41-93		401	LOM ALL
Alternate Brake Selector Valve Removal TASK 32-41-93-000-801			401	LOM ALL
Alternate Brake Selector Valve Installation TASK 32-41-93-420-801			405	LOM ALL
Alternate Brake Selector Valve Test TASK 32-41-93-700-801			407	LOM ALL

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Gear Retract Braking - Operational Test TASK 32-41-93-710-801			409	LOM ALL
BRAKE SHUTTLE VALVES - REMOVAL/INSTALLATION	32-41-95		401	LOM ALL
Brake Shuttle Valve Removal TASK 32-41-95-000-801			401	LOM ALL
Brake Shuttle Valve Installation TASK 32-41-95-400-801			405	LOM ALL
BRAKE FLOW LIMITERS - REMOVAL/INSTALLATION	32-41-96		401	LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494
Brake Flow Limiter Removal TASK 32-41-96-000-801			401	LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494
Brake Flow Limiter Installation TASK 32-41-96-400-801			405	LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494
ANTISKID/AUTOBRAKE SYSTEM - ADJUSTMENT/TEST	32-42-00		501	LOM ALL
Antiskid/Autobrake Control Unit Operational Test TASK 32-42-00-720-801			501	LOM ALL
Antiskid Valve Functional Test TASK 32-42-00-720-802			507	LOM ALL
Transducer Functional Test TASK 32-42-00-710-801			513	LOM ALL

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Autobrake Pressure Control Module Functional Test TASK 32-42-00-400-801			520	LOM ALL
Autobrake Shuttle Valve Operational Test TASK 32-42-00-400-802			525	LOM ALL
Transducer Operational Test TASK 32-42-00-710-802			526	LOM ALL
ANTISKID WHEEL SPEED TRANSDUCER - REMOVAL/INSTALLATION	32-42-11		401	LOM ALL
Transducer Removal TASK 32-42-11-000-801			401	LOM ALL
Transducer Installation TASK 32-42-11-400-801			405	LOM ALL
ANTISKID/AUTOBRAKE CONTROL UNIT - REMOVAL/INSTALLATION	32-42-21		401	LOM ALL
Antiskid/Autobrake Control Unit Removal TASK 32-42-21-000-801			401	LOM ALL
Antiskid/Autobrake Control Unit Installation TASK 32-42-21-400-801			404	LOM ALL
ANTISKID VALVE - REMOVAL/INSTALLATION	32-42-31		401	LOM ALL
Antiskid Valve Removal TASK 32-42-31-000-801			401	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 466-999; LOM 422-434, 437-447, 450-465 PRE SB 737-32-1528
Antiskid Valve Installation TASK 32-42-31-400-801			408	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 466-999; LOM 422-434, 437-447, 450-465 PRE SB 737-32-1528
Antiskid Valve Removal TASK 32-42-31-000-802			413	LOM 422-434, 437-447, 450-465 POST SB 737-32-1528
Antiskid Valve Installation TASK 32-42-31-400-802			423	LOM 422-434, 437-447, 450-465 POST SB 737-32-1528

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Antiskid Landing Gear Lever Up Switch Removal TASK 32-42-51-000-801			401	LOM ALL
Antiskid Landing Gear Lever Up Switch Installation TASK 32-42-51-420-801			405	LOM ALL
AUTOBRAKE SELECTOR SWITCH - REMOVAL/INSTALLATION	32-42-61		401	LOM ALL
Autobrake Selector Switch - Removal TASK 32-42-61-000-801			401	LOM ALL
Autobrake Selector Switch - Installation TASK 32-42-61-400-801			406	LOM ALL
AUTOBRAKE SHUTTLE VALVE - REMOVAL/INSTALLATION	32-42-71		401	LOM ALL
Autobrake Shuttle Valve Removal TASK 32-42-71-000-801			401	LOM ALL
Autobrake Shuttle Valve Installation TASK 32-42-71-400-801			407	LOM ALL
Autobrake Shuttle Valve Pressure Switch Removal TASK 32-42-71-000-802			410	LOM ALL
Autobrake Shuttle Valve Pressure Switch Installation TASK 32-42-71-400-802			411	LOM ALL
AUTOBRAKE PRESSURE CONTROL MODULE - REMOVAL/INSTALLATION	32-42-81		401	LOM ALL
Autobrake Pressure Control Module Removal TASK 32-42-81-000-801			401	LOM ALL
Autobrake Pressure Control Module Installation TASK 32-42-81-400-801			408	LOM ALL
Autobrake Pressure Control Module Line Replaceable Units Removal TASK 32-42-81-000-802			411	LOM ALL

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Autobrake Pressure Control Module Line Replaceable Units Installation TASK 32-42-81-400-802			414	LOM ALL
PARKING BRAKE SYSTEM - ADJUSTMENT/TEST	32-44-00		501	LOM ALL
Parking Brake System Adjustment TASK 32-44-00-820-801			501	LOM ALL
Parking Brake System - Operational Test TASK 32-44-00-710-801			514	LOM ALL
Parking Brake Hold Check TASK 32-44-00-790-801			517	LOM ALL
PARKING BRAKE LINKAGE - REMOVAL/INSTALLATION	32-44-11		401	LOM ALL
Parking Brake Lever Removal TASK 32-44-11-000-801			401	LOM ALL
Parking Brake Lever Installation TASK 32-44-11-400-801			407	LOM ALL
Parking Brake Jackshaft Removal TASK 32-44-11-000-802			408	LOM ALL
Parking Brake Jackshaft Installation TASK 32-44-11-400-802			412	LOM ALL
Parking Brake Latch Removal TASK 32-44-11-000-803			413	LOM ALL
Parking Brake Latch Installation TASK 32-44-11-400-803			417	LOM ALL
Parking Brake Latch Switch Removal TASK 32-44-11-000-804			418	LOM ALL
Parking Brake Latch Switch Installation TASK 32-44-11-400-804			422	LOM ALL
Parking Brake Mechanism Visual Inspection TASK 32-44-11-000-805			423	LOM ALL
PARKING BRAKE SHUTOFF VALVE - REMOVAL/INSTALLATION	32-44-21		401	LOM ALL
Parking Brake Shutoff Valve Removal TASK 32-44-21-000-801			401	LOM ALL

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Parking Brake Shutoff Valve Installation TASK 32-44-21-400-801			405	LOM ALL
TIRES AND WHEELS - MAINTENANCE PRACTICES	32-45-00		201	LOM ALL
Tires and Wheels - Deflation/Inflation TASK 32-45-00-000-801			201	LOM ALL
TIRES AND WHEELS - INSPECTION/CHECK	32-45-00		601	LOM ALL
Wheels Fast Check (Wheel Installed on the Airplane) TASK 32-45-00-700-801			601	LOM ALL
Wheels Inspection (Wheel Removed from the Airplane) TASK 32-45-00-700-802			602	LOM ALL
Tires - Inspection TASK 32-45-00-700-803			603	LOM ALL
Wheel Bearings Inspection TASK 32-45-00-211-801			616	LOM ALL
TIRE INFLATION VALVE - REMOVAL/INSTALLATION	32-45-08		401	LOM ALL
Tire Inflation Valve Removal TASK 32-45-08-000-801			401	LOM ALL
Tire Inflation Valve Installation TASK 32-45-08-400-801			405	LOM ALL
MAIN LANDING GEAR WHEEL AND TIRE ASSEMBLY - REMOVAL/INSTALLATION	32-45-11		401	LOM ALL
Main Landing Gear Wheel and Tire Assembly Removal TASK 32-45-11-000-801			401	LOM ALL
Main Landing Gear Wheel and Tire Assembly Installation TASK 32-45-11-400-801			411	LOM ALL
NOSE LANDING GEAR WHEEL AND TIRE ASSEMBLY - REMOVAL/INSTALLATION	32-45-21		401	LOM ALL
Nose Landing Gear Wheel and Tire Assembly - Removal TASK 32-45-21-000-801			401	LOM ALL

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Nose Landing Gear Wheel and Tire Assembly - Installation TASK 32-45-21-400-801			410	LOM ALL
NOSE WHEEL SPIN BRAKE LINING - MAINTENANCE PRACTICES	32-45-31		201	LOM ALL
Nose Wheel Spin Brake Lining - Removal TASK 32-45-31-000-801			201	LOM ALL
Nose Wheel Spin Brake Lining - Installation TASK 32-45-31-400-801			204	LOM ALL
Nose Wheel Spin Brake Lining Inspection TASK 32-45-31-700-801			204	LOM ALL
BRAKE TEMPERATURE MONITORING SYSTEM (BTMS) - ADJUSTMENT/TEST	32-46-00		501	LOM 432, 437, 438, 445, 464
Brake Temperature Monitoring System (BTMS) - BITE Test TASK 32-46-00-740-801			501	LOM 432, 437, 438, 445, 464
Brake Temperature Sensors - Operational Test of Each Sensor TASK 32-46-00-710-801			505	LOM 432, 437, 438, 445, 464
BRAKE TEMPERATURE SENSOR - REMOVAL/INSTALLATION	32-46-21		401	LOM 432, 437, 438, 445, 464
Brake Temperature Sensor Removal TASK 32-46-21-000-801			401	LOM 432, 437, 438, 445, 464
Brake Temperature Sensor Installation TASK 32-46-21-400-801			404	LOM 432, 437, 438, 445, 464
BRAKE TEMPERATURE MONITOR UNIT (BTMU) - REMOVAL/INSTALLATION	32-46-31		401	LOM 432, 437, 438, 445, 464
Brake Temperature Monitor Unit Removal TASK 32-46-31-000-801			401	LOM 432, 437, 438, 445, 464
Brake Temperature Monitor Unit Installation TASK 32-46-31-400-801			404	LOM 432, 437, 438, 445, 464
NOSE WHEEL STEERING SYSTEM - ADJUSTMENT/TEST	32-51-00		501	LOM ALL
General Check of the Adjustment of the Nose Wheel Steering System TASK 32-51-00-820-803			501	LOM ALL

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Rudder Pedal Interconnect Mechanism Adjustment TASK 32-51-00-820-801			527	LOM ALL
Nose Wheel Steering System Adjustment Check TASK 32-51-00-820-805			531	LOM ALL
Nose Wheel Steering System Adjustment TASK 32-51-00-820-802			537	LOM ALL
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STEERING SYSTEM CABLES - INSPECTION/CHECK	32-51-31		601	LOM ALL
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NOSE LANDING GEAR CONTROL WHEEL AND TILLER ASSEMBLY - REMOVAL/INSTALLATION	32-51-41		401	LOM ALL
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Nose Landing Gear Steering Control Wheel Installation TASK 32-51-41-400-802			415	LOM ALL
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Main Landing Gear Uplock Sensor Installation TASK 32-61-21-400-801			406	LOM ALL
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Nose Landing Gear Lock Sensor Removal TASK 32-61-41-020-801			401	LOM ALL
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NOSE LANDING GEAR LOCK SENSOR - ADJUSTMENT/TEST	32-61-41		501	LOM ALL
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Nose Landing Gear Down Position Sensor Clearance Adjustment TASK 32-61-51-400-801			505	LOM ALL
Nose Landing Gear Down Position Sensor Operational Test TASK 32-61-51-710-801			507	LOM ALL
SUPPLEMENTAL PROXIMITY SENSOR ELECTRONIC UNIT (SPSEU) - ADJUSTMENT/TEST	32-62-00		501	LOM 465-999
Supplemental Proximity Sensor Electronic Unit (SPSEU) BITE Test - Ground Test TASK 32-62-00-740-801			501	LOM 465-999
SUPPLEMENTAL PROXIMITY SENSOR ELECTRONIC UNIT (SPSEU) CARD - REMOVAL/INSTALLATION	32-62-01		401	LOM 465-999
Supplemental Proximity Sensor Electronic Unit (SPSEU) Card Removal TASK 32-62-01-000-801			401	LOM 465-999
Supplemental Proximity Sensor Electronic Unit (SPSEU) Card Installation TASK 32-62-01-400-801			404	LOM 465-999
TAIL SKID ASSEMBLY - MAINTENANCE PRACTICES	32-71-00		201	LOM ALL
Two Position Tail Skid Assembly - Deactivation TASK 32-71-00-800-801			201	LOM 465-999
Two Position Tail Skid Assembly - Activation TASK 32-71-00-800-802			208	LOM 465-999
Replacement of the Tail Skid Cartridge Core Assembly TASK 32-71-00-960-801			209	LOM 465-999
Replacement of the Tail Skid Shoe. TASK 32-71-00-960-802			215	LOM ALL

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SUBJECT	CHAPTER SECTION SUBJECT	CONF	PAGE	EFFECT
Replacement of the Tail Skid Warning Decal TASK 32-71-00-960-803			218	LOM ALL
TAIL SKID ASSEMBLY - REMOVAL/INSTALLATION	32-71-00		401	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
Drag Lever Removal TASK 32-71-00-000-801			401	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
Drag Lever Installation TASK 32-71-00-400-801			405	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
Cartridge Assembly Removal TASK 32-71-00-000-802			406	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
Cartridge Assembly Installation TASK 32-71-00-400-802			408	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
TWO POSITION TAIL SKID ASSEMBLY - REMOVAL/INSTALLATION	32-71-00	1	401	LOM 465-999
Drag Lever Removal TASK 32-71-00-000-809		1	401	LOM 465-999
Drag Lever Installation TASK 32-71-00-400-806		1	406	LOM 465-999
Cartridge Assembly Removal TASK 32-71-00-000-810		1	408	LOM 465-999
Cartridge Assembly Installation TASK 32-71-00-400-807		1	410	LOM 465-999
TAIL SKID ASSEMBLY - ADJUSTMENT/TEST	32-71-00		501	LOM 465-999
Tail Skid Assembly Operational Test TASK 32-71-00-710-801			501	LOM 465-999
TAIL SKID - INSPECTION/CHECK	32-71-00		601	LOM ALL
Tailskid Cartridge Assembly - Inspection/Check TASK 32-71-00-200-801			601	LOM ALL
Tailskid Shoe Inspection TASK 32-71-00-900-801			602	LOM ALL

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SUBJECT	CHAPTER SECTION SUBJECT	CONF	PAGE	EFFECT
Tail Skid Hydraulic Actuator and Linkage Inspection TASK 32-71-00-200-802			607	LOM 465-999
TAIL SKID HYDRAULIC ACTUATOR - REMOVAL/INSTALLATION	32-71-04		401	LOM 465-999
Tail Skid Hydraulic Actuator Removal TASK 32-71-04-000-801			401	LOM 465-999
Tail Skid Hydraulic Actuator Installation TASK 32-71-04-400-801			406	LOM 465-999
TAIL SKID PIVOT LINKAGE - REMOVAL/INSTALLATION	32-71-21		401	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
Tail Skid Pivot Linkage Removal TASK 32-71-21-000-801			401	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
Tail Skid Pivot Linkage Installation TASK 32-71-21-400-801			405	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
TAIL SKID LINK ASSEMBLY - REMOVAL/INSTALLATION	32-71-22		401	LOM 465-999
Tail Skid Upper Link - Removal TASK 32-71-22-000-801			401	LOM 465-999
Tail Skid Upper Link Installation TASK 32-71-22-400-801			407	LOM 465-999
Tail Skid Lock Link - Removal TASK 32-71-22-000-802			409	LOM 465-999
Tail Skid Lock Link Installation TASK 32-71-22-400-802			412	LOM 465-999

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1. General

A. This procedure has these tasks:

(1) Landing Gear - Deactivation

(2) Landing Gear - Activation

TASK 32-00-00-800-801

2. Landing Gear - Deactivation

(Figure 201)

A. General

(1) This task will deactivate these components in the landing gear system.

- Nose Landing Gear
- Main Landing Gear

B. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

Reference	Description
STD-858	Tag - DO NOT OPERATE

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Procedure

SUBTASK 32-00-00-860-130

(1) For hydraulic system A, do this task: (Hydraulic System A or B Power Removal, TASK 29-11-00-860-805).

SUBTASK 32-00-00-860-131

(2) Do this task: (Remove Electrical Power, TASK 24-22-00-860-812).

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SUBTASK 32-00-00-480-043

> **WARNING**
> OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

> **WARNING**
> MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE AWAY FROM THE AREA AROUND THE LANDING GEAR. IF THE LANDING GEAR MOVES, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Do this task: (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

SUBTASK 32-00-00-480-044

(4) Do this task: (Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801 or Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802).

F. Tryout

NOTE: This tryout is to make sure the landing gear system is in a zero energy state.

SUBTASK 32-00-00-860-132

> **WARNING**
> MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE AWAY FROM THE AREA AROUND THE LANDING GEAR. IF THE LANDING GEAR MOVES, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Move the control lever for the landing gear to the UP position.

(a) Make sure that the landing gear does not retract.

SUBTASK 32-00-00-860-133

> **WARNING**
> MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE AWAY FROM THE AREA AROUND THE LANDING GEAR. IF THE LANDING GEAR MOVES, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Move the control lever for the landing gear to the DN position.

(a) Make sure that the landing gear does not extend.

SUBTASK 32-00-00-480-045

(3) Attach a DO NOT OPERATE tag, STD-858 on the control lever for the landing gear.

END OF TASK

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FLIGHT COMPARTMENT

G08680 S0006575176_V2

Landing Gear
Figure 201/32-00-00-990-801

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TASK 32-00-00-800-802

3. Landing Gear - Activation

(Figure 201)

A. General

(1) This task will activate these components in the landing gear system.

- Nose Landing Gear
- Main Landing Gear

B. References

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1505	Chocks - Wheel Part #: 19CAL455 - Type 1 Supplier: $1329 Part #: 99-9028-6000 Supplier: 59603 Part #: AC6820-LR Supplier: 032T9 Part #: ALPHACHOCKS MAX Supplier: 6X2T3 Part #: W86 Supplier: 3XZM7 Part #: W88-RH Supplier: 3XZM7 Opt Part #: W88 Supplier: 3XZM7 Opt Part #: W92 Supplier: 9L752
STD-858	Tag - DO NOT OPERATE

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Procedure

SUBTASK 32-00-00-210-017

> **WARNING** MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE AWAY FROM THE AREA AROUND THE LANDING GEAR. IF THE LANDING GEAR MOVES, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that the control lever for the landing gear is in the DN position.

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SUBTASK 32-00-00-080-040

WARNING

MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE AWAY FROM THE AREA AROUND THE LANDING GEAR. IF THE LANDING GEAR MOVES, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do this task: (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

SUBTASK 32-00-00-080-041

(3) If it is necessary, remove the wheel chock, COM-1505.

SUBTASK 32-00-00-080-042

(4) Remove the DO NOT OPERATE tag, STD-858 on the control lever for the landing gear.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR - DDG MAINTENANCE PROCEDURES

1. **General**

A. This procedure has the maintenance tasks for the Master Minimum Equipment List (MMEL) maintenance requirements as shown in the Dispatch Deviations Procedures Guide (DDPG). These tasks prepare the airplane for flight with systems/components that are inoperative.

B. This procedure also has the tasks that put the airplane back to its usual condition.

C. These are the tasks for the components in the landing gear system:

(1) MMEL 32-2 (DDPG) Preparation - Antiskid System Inoperative

(2) MMEL 32-2 (DDPG) Restoration - Antiskid System Inoperative

(3) MMEL 32-3 (DDPG) Preparation - Parking Brake Valve Inoperative

(4) MMEL 32-3 (DDPG) Restoration - Parking Brake Valve Inoperative

(5) MMEL 32-4 (DDPG) Preparation - Parking Brake Light Inoperative

(6) MMEL 32-4 (DDPG) Restoration - Parking Brake Light Inoperative

(7) MMEL 32-7 (DDPG) Preparation - Automatic Brake System Inoperative

(8) MMEL 32-7 (DDPG) Restoration - Automatic Brake System Inoperative

(9) MMEL 32-8 (DDPG) Preparation - Rudder Pedal Nose Wheel Steering System Inoperative

(10) MMEL 32-8 (DDPG) Restoration - Rudder Pedal Nose Wheel Steering System Inoperative

(11) MMEL 32-10 (DDPG) Preparation - Alternate Antiskid Valves Inoperative

(12) MMEL 32-10 (DDPG) Restoration - Alternate Antiskid Valves Inoperative

(13) MMEL 32-12 (DDPG) Preparation - Nose Wheel Steering Switch Inoperative

(14) MMEL 32-12 (DDPG) Restoration - Nose Wheel Steering Switch Inoperative

(15) MMEL 32-13 (DDPG) Preparation - Hydraulic Brake Pressure Indicator Inoperative

(16) MMEL 32-13 (DDPG) Restoration - Hydraulic Brake Pressure Indicator Inoperative

(17) MMEL 32-15 (DDPG) Preparation - Landing Gear Selector Bypass Valve Inoperative

(18) MMEL 32-15 (DDPG) Restoration - Landing Gear Selector Bypass Valve Inoperative

LOM 411, 426-432, 439, 441, 443, 444, 446, 447, 450-452, 455-457, 461-999

(19) MMEL 32-16 (DDPG) Preparation - Landing Gear Actuation System Inoperative

(20) MMEL 32-16 (DDPG) Restoration - Landing Gear Actuation System Inoperative

LOM ALL

(21) MMEL 32-17-01 (DDPG) Preparation - PSEU Fault

(22) MMEL 32-17-01 (DDPG) Restoration - PSEU Fault

(23) MMEL 32-17-02 (DDPG) Preparation - PSEU Light Inoperative

(24) MMEL 32-17-02 (DDPG) Restoration - PSEU Light Inoperative

LOM 411, 426-432, 439, 441, 443, 444, 446, 447, 450-452, 455-457, 461-999

(25) MMEL 32-18 (DDPG) Preparation - Landing Gear Alternate Extension System Inoperative

(26) MMEL 32-18 (DDPG) Restoration - Landing Gear Alternate Extension System Inoperative

LOM ALL

(27) MMEL 32-19 (DDPG) Preparation - Main Landing Gear Uplock Springs Inoperative

(28) MMEL 32-19 (DDPG) Restoration - Main Landing Gear Uplock Springs Inoperative

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(29) MMEL 32-20 (DDPG) Preparation - Landing Gear Frangible Fitting Broken or Missing

(30) MMEL 32-20 (DDPG) Restoration - Landing Gear Frangible Fitting Broken or Missing

(31) MMEL 32-21 (DDPG) Preparation - Flap Landing Warning Switch S138 Contacts Inoperative

(32) MMEL 32-21 (DDPG) Restoration - Flap Landing Warning Switch S138 Contacts Inoperative

LOM 465-999

(33) MMEL 32-22-01-01A (DDPG) Preparation - Tail Skid Secured in Retracted Position and Inoperative

(34) MMEL 32-22-01-01A (DDPG) Restoration - Tail Skid Secured in Retracted Position and Inoperative

(35) MMEL 32-22-01-01B (DDPG) Preparation - Tail Skid Secured in Extended Position and Inoperative

(36) MMEL 32-22-01-01B (DDPG) Restoration - Tail Skid Secured in Extended Position and Inoperative

(37) MMEL 32-22-01-02 (DDPG) Preparation - Cartridge Core Assembly Inoperative

(38) MMEL 32-22-01-02 (DDPG) Restoration - Cartridge Core Assembly Inoperative

LOM ALL

TASK 32-00-00-040-801

2. MMEL 32-2 (DDPG) Preparation - Antiskid System Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Antiskid System Inoperative.

(2) This task has these two methods:

(a) Applicable Antiskid Channel Deactivation (Preferred Method) - This procedure uses the BITE test to find which antiskid channel is inoperative

(b) Antiskid System Deactivation (Alternate Method).

B. References

Reference	Title
FIM 32-42 TASK 801	Antiskid/Autobrake Control Unit (AACU) BITE Procedure

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Applicable Antiskid Channel Deactivation (Preferred Method)

SUBTASK 32-00-00-740-001

(1) Find which antiskid channel is inoperative:

(a) To get access to the antiskid/autobrake control unit (AACU) on the E1-3 shelf, do this step:

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Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

(b) Do the AACU FIM 32-42 TASK 801.

SUBTASK 32-00-00-040-001

(2) Deactivate the applicable antiskid channel:

(a) If message XDCR 1, XDCR 4, BOX 1, BOX 4, VLV 1, OR VLV 4 shows on the AACU display, then do this step:

1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	18	C00195	LANDING GEAR ANTISKID OUTBD

(b) If message XDCR 2, XDCR 3, BOX 2, BOX 3, VLV 2, OR VLV 3 shows on the AACU display, then do this step:

1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD

(c) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-00-00-480-001

(3) Attach an AUTOBRAKE INOP - LEAVE OFF placard to the autobrake switch.

F. Antiskid System Deactivation (Alternate Method)

SUBTASK 32-00-00-860-001

(1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-00-00-480-002

(2) Attach an AUTOBRAKE INOP - LEAVE OFF placard to the autobrake switch.

END OF TASK

TASK 32-00-00-440-801

3. MMEL 32-2 (DDPG) Restoration - Antiskid System Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Antiskid System Inoperative.

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B. References

Reference	Title
FIM 32-42 TASK 801	Antiskid/Autobrake Control Unit (AACU) BITE Procedure

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Antiskid System Restoration

SUBTASK 32-00-00-860-002

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

F. Antiskid System Repair

SUBTASK 32-00-00-810-001

(1) Do these steps to correct the fault:

(a) To get access to the antiskid/autobrake control unit (AACU), do this step:

Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

(b) To find the maintenance message number, do this task: FIM 32-42 TASK 801.

1) Find the task number on the same line as the maintenance message number.

(c) Go to the task in the FIM and do the steps in the task.

(d) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-00-00-080-001

(2) Remove the AUTOBRAKE INOP - LEAVE OFF placard from the autobrake switch.

——— END OF TASK ———

TASK 32-00-00-040-802

4. MMEL 32-3 (DDPG) Preparation - Parking Brake Valve Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Parking Brake Valve Inoperative.

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B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Parking Brake Valve Deactivation in the Closed Position

SUBTASK 32-00-00-480-003

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-003

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-00-00-480-004

(3) Make sure the tires have chocks installed around them.

SUBTASK 32-00-00-860-004

(4) Release the parking brake.

SUBTASK 32-00-00-860-005

(5) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-00-00-020-001

(6) Disconnect the electrical connector from the parking brake valve in the main wheel well.

(a) Attach the electrical connector to the parking brake valve.

SUBTASK 32-00-00-860-006

(7) Manually move the position override lever on the parking brake valve to the POS 2 (closed) position.

SUBTASK 32-00-00-860-007

(8) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

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SUBTASK 32-00-00-860-008

(9) Make sure the ANTISKID INOP light comes on.

SUBTASK 32-00-00-860-009

(10) Set the autobrake switch to the OFF position.

SUBTASK 32-00-00-080-002

WARNING DO NOT REMOVE THE DOWNLOCK PINS UNLESS ALL MAINTENANCE AND SERVICING OF THE AIRPLANE IS COMPLETE. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(11) If all maintenance and servicing of the airplane is complete, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-00-00-480-005

(12) Attach a LIGHT INOP placard to the parking brake light on the center aisle stand.

SUBTASK 32-00-00-480-006

(13) Attach a PARK BRK VLV CLOSED placard near the parking brake lever.

SUBTASK 32-00-00-480-007

(14) Attach an AUTOBRAKE INOP - LEAVE OFF placard to the autobrake switch.

SUBTASK 32-00-00-480-008

(15) Attach an AUTO SPOILERS INOP placard near the auto speed brake control lever.

——— END OF TASK ———

TASK 32-00-00-440-802

5. MMEL 32-3 (DDPG) Restoration - Parking Brake Valve Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Parking Brake Valve Inoperative.

B. References

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
FIM 32-42 TASK 801	Antiskid/Autobrake Control Unit (AACU) BITE Procedure

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

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E. Parking Brake Valve Restoration

SUBTASK 32-00-00-480-009

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-480-010

(2) Make sure the tires have chocks installed around them.

SUBTASK 32-00-00-860-010

(3) Release the parking brake.

SUBTASK 32-00-00-860-011

(4) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-00-00-420-001

(5) Connect the electrical connector to the parking brake valve.

SUBTASK 32-00-00-860-012

(6) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

F. Parking Brake Valve Repair

SUBTASK 32-00-00-810-002

(1) Do these steps to correct the fault:

(a) To get access to the antiskid/autobrake control unit (AACU), do this step:

Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

(b) To find the maintenance message number, do this task: FIM 32-42 TASK 801.

1) Find the task number on the same line as the maintenance message number.

(c) Go to the task in the FIM and do the steps in the task.

(d) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-00-00-080-003

> **WARNING** DO NOT REMOVE THE DOWNLOCK PINS UNLESS ALL MAINTENANCE AND SERVICING OF THE AIRPLANE IS COMPLETE. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If all maintenance and servicing of the airplane is complete, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-00-00-080-004

(3) Remove the LIGHT INOP placard from the parking brake light on the center aisle stand.

SUBTASK 32-00-00-080-005

(4) Remove the PARK BRK VLV CLOSED placard near the parking brake lever.

SUBTASK 32-00-00-080-006

(5) Remove the AUTOBRAKE INOP - LEAVE OFF placard from the autobrake switch.

SUBTASK 32-00-00-080-007

(6) Remove the AUTO SPOILERS INOP placard near the auto speed brake control lever.

END OF TASK

TASK 32-00-00-040-803

6. MMEL 32-4 (DDPG) Preparation - Parking Brake Light Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Parking Brake Light Inoperative.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Procedure

SUBTASK 32-00-00-480-011

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-480-012

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-00-00-860-014

(3) Make sure that the parking brake shutoff valve operates normally:

(a) Set the parking brake.

(b) Make sure that the parking brake shutoff valve moves to the POS 2 (closed) position.

NOTE: The parking brake shutoff valve is installed on the wheel well aft bulkhead.

(c) Release the parking brake.

(d) Make sure that the parking brake shutoff valve moves to POS 1 (open) position.

(e) Make sure that the ANTISKID INOP light extinguishes when the parking brake is released.

NOTE: The ANTISKID INOP light can come on when the parking brake is set. If ANTISKID INOP light does not extinguish when the parking brake is released, refer to MMEL 32-2 (DDPG) Preparation - Antiskid System Inoperative, TASK 32-00-00-040-801.

SUBTASK 32-00-00-080-008

WARNING	MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(4) If all maintenance and servicing of the airplane is complete, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-00-00-480-013

(5) Attach a LIGHT INOP placard to the parking brake light on the center aisle stand.

END OF TASK

TASK 32-00-00-440-803

7. MMEL 32-4 (DDPG) Restoration - Parking Brake Light Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Parking Brake Light Inoperative.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

C. Procedure

SUBTASK 32-00-00-960-001

(1) Replace the parking brake light.

SUBTASK 32-00-00-740-002

(2) If the parking brake light was not the problem, then do these steps to correct the fault:

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.

3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.

2) Find the task number on the same line as the fault description.

3) Go to the task in the FIM and do the steps in the task.

SUBTASK 32-00-00-080-009

(3) Remove the LIGHT INOP placard from the parking brake light on the center aisle stand.

——— END OF TASK ———

TASK 32-00-00-040-805

8. MMEL 32-7 (DDPG) Preparation - Automatic Brake System Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Automatic Brake System Inoperative.

(2) If the AUTO BRAKE DISARM light goes off with the autobrake select switch in the OFF position, then airplane can be dispatched without the autobrake valve module deactivation.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-42-81-000-801	Autobrake Pressure Control Module Removal (P/B 401)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Autobrake Valve Module Deactivation - Method 1

SUBTASK 32-00-00-860-016

(1) Remove the pressure from the hydraulic system B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-860-017

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

SUBTASK 32-00-00-020-003

(3) Disconnect, cap and stow the electrical connectors from the autobrake valve module in the main wheel well.

SUBTASK 32-00-00-480-014

(4) Remove the auto brake valve module, do this task: Autobrake Pressure Control Module Removal, TASK 32-42-81-000-801.

(a) Cap the hydraulic supply pressure line.

(b) Connect the brake pressure line and the return line with a 3/8 inch section of tubing or flexible hose.

NOTE: This will keep the brake shuttle valves from the brakes off position.

SUBTASK 32-00-00-860-055

(5) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

SUBTASK 32-00-00-860-018

WARNING MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. THE AILERONS, RUDDER, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) Pressurize the hydraulic system B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-210-001

(7) Make sure that there is no leakage at the autobrake valve module.

SUBTASK 32-00-00-860-019

(8) Remove the pressure from the hydraulic system B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-480-015

(9) Attach an INOP placard to the autobrake select switch.

E. Autobrake Brake Module Deactivation - Method 2

SUBTASK 32-00-00-860-056

(1) Remove the pressure from the hydraulic system B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-860-134

(2) Do these steps to make sure that the system is fully depressurized before you open a hydraulic connection:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the downlock pins are installed on the nose and main landing gear (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

(b) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

(c) Release the parking brake.

(d) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: You will have to fully depress, hold for 2 seconds, and release the brake pedals approximately 14 times to completely release the pressure from the accumulator. This will prevent high-pressure fluid spray when replacing components within the hydraulic brake system.

(e) Set the parking brake.

SUBTASK 32-00-00-860-021

(3) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

SUBTASK 32-00-00-020-004

(4) Disconnect electrical connectors D2570, D2572, D2574, and D2576 from the autobrake valve module in the main wheel well.

SUBTASK 32-00-00-020-005

(5) Disconnect the inlet hydraulic pressure line from the autobrake valve module.

(a) Install a plug to the inlet hydraulic pressure line and cap to the autobrake valve module port.

SUBTASK 32-00-00-860-057

(6) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

SUBTASK 32-00-00-860-022

WARNING

MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. THE AILERONS, RUDDER, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(7) Pressurize the hydraulic system B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-210-002

(8) Make sure that there is no leakage at the autobrake valve module.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-00-00-860-023

(9) Remove the pressure from the hydraulic system B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-480-017

(10) Attach an INOP placard to the autobrake select switch.

END OF TASK

TASK 32-00-00-440-805

9. MMEL 32-7 (DDPG) Restoration - Automatic Brake System Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Automatic Brake System Inoperative.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
FIM 32-42 TASK 801	Antiskid/Autobrake Control Unit (AACU) BITE Procedure

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
130	Subzone - Body Station 540.00 to Body Station 727.00
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Autobrake Valve Module Restoration

SUBTASK 32-00-00-840-001

(1) Do these steps to make sure that the system is fully depressurized before you open a hydraulic connection:

(a) Make sure that the downlock pins are installed on the nose and main lading gear (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

(b) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

(c) Release the parking brake.

(d) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: You will have to depress, hold for 2 seconds, and release the brake pedals approximately 14 times to completely release the pressure from the accumulator. This will prevent high-pressure fluid spray when replacing components within the hydraulic brake system.

(e) Set the parking brake.

SUBTASK 32-00-00-080-010

(2) Remove the 3/8 inch section of tubing or flexible hose from the brake pressure line and the return line, if it is installed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-00-00-080-011

(3) Remove the cap from the autobrake valve module and plug from the hydraulic pressure line, if they are installed.

(a) Connect the hydraulic pressure line to the autobrake valve module.

SUBTASK 32-00-00-420-002

(4) Connect the electrical connectors to the autobrake valve module.

F. Autobrake Valve Module Repair

SUBTASK 32-00-00-810-004

(1) Do these steps to correct the fault:

(a) To get access to the Antiskid/Autobrake Control Unit (AACU), do this step:

1) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

(b) To find the maintenance message number, do this task: FIM 32-42 TASK 801.

(c) Find the task number on the same line as the maintenance message number.

(d) Go to the task in the Fault Isolation Manual (FIM) and do the steps in the task.

(e) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-00-00-080-013

(2) Remove the INOP placard from the autobrake select switch.

END OF TASK

TASK 32-00-00-040-806

10. MMEL 32-8 (DDPG) Preparation - Rudder Pedal Nose Wheel Steering System Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Rudder Pedal Nose Wheel Steering System Inoperative.

B. References

Reference	Title
32-09-00 P/B 201	AIR/GROUND SYSTEM - MAINTENANCE PRACTICES

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
324	Vertical Fin - Rear Spar To Trailing Edge
713	Nose Landing Gear

D. Procedure

SUBTASK 32-00-00-730-003

(1) Put the airplane in the air mode, do this pageblock: AIR/GROUND SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 32-09-00/201.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-00-00-860-025

(2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

SUBTASK 32-00-00-860-129

(3) Return the airplane to the ground mode, do this pageblock: AIR/GROUND SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 32-09-00/201.

SUBTASK 32-00-00-860-026

(4) Operate the rudder pedal steering.

(a) Make sure that the nose gear does not turn.

SUBTASK 32-00-00-860-027

(5) Operate the rudder pedals.

(a) Make sure that the rudder operates normally.

SUBTASK 32-00-00-860-028

(6) Operate the tiller.

(a) Make sure that the nose gear steering operates normally.

SUBTASK 32-00-00-860-029

(7) Attach a RUDDER PEDAL NWS INOP placard to each pilots' airspeed indicator.

END OF TASK

TASK 32-00-00-440-806

11. MMEL 32-8 (DDPG) Restoration - Rudder Pedal Nose Wheel Steering System Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Rudder Pedal Nose Wheel Steering System Inoperative.

B. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

C. Rudder Pedal Nose Gear Steering System Restoration

SUBTASK 32-00-00-860-030

(1) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Rudder Pedal Nose Gear Steering System Repair

SUBTASK 32-00-00-740-004

(1) Do these steps to correct the fault:

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.

3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.

2) Find the task number on the same line as the fault description.

3) Go to the task in the FIM and do the steps in the task.

SUBTASK 32-00-00-080-014

(2) Remove the RUDDER PEDAL NWS INOP placard from the each pilots' airspeed indicator.

——— END OF TASK ———

TASK 32-00-00-040-807

12. MMEL 32-10 (DDPG) Preparation - Alternate Antiskid Valves Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Alternate Antiskid Valves Inoperative.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Manual Braking Operational Test

SUBTASK 32-00-00-480-018

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-031

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-00-00-480-019

(3) Make sure the tires have chocks installed around them.

SUBTASK 32-00-00-860-032

(4) Make sure the pressure is removed from the system B hydraulic system.

SUBTASK 32-00-00-860-033

WARNING	KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Pressurize the hydraulic system A. To pressure it, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-860-034

(6) Make sure that you can operate the brakes manually:

(a) Push and release the brake pedals for three or four times.

(b) Make sure that all brakes operate normally.

NOTE: To make sure that the brake operates normally, look for the movement of the brake wear indicator pins.

(c) If all of the brakes operate normally, then attach a placard “ALT ANTISKID VALVE INOP” next to the antiskid inop light.

SUBTASK 32-00-00-860-035

(7) If the brakes do not operate normally, then do these steps:

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

(b) Push and release the brake pedals for two or three times.

(c) Make sure that all brakes operate normally.

NOTE: To make sure that the brake operates normally, look for the movement of the brake wear indicator pins.

(d) If all the brakes operate normally, then prepare the airplane for flight with the Antiskid System Inoperative. Do this task: MMEL 32-2 (DDPG) Preparation - Antiskid System Inoperative, TASK 32-00-00-040-801.

(e) If one of the brakes does not operate normally, then the airplane cannot be dispatched.

SUBTASK 32-00-00-860-036

(8) Remove the pressure from the hydraulic system A. To remove it, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-00-00-440-807

13. MMEL 32-10 (DDPG) Restoration - Alternate Antiskid Valves Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Alternate Antiskid Valves Inoperative.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

C. Procedure

SUBTASK 32-00-00-810-005

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-00-00-080-015

(2) Remove the ALT ANTISKID VALVE INOP placard from the ANTISKID INOP light.

——— END OF TASK ———

TASK 32-00-00-040-808

14. MMEL 32-12 (DDPG) Preparation - Nose Wheel Steering Switch Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Nose Wheel Steering Switch Inoperative.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-31-71-400-802	Operational Test of the Transfer Valve (P/B 401)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Procedure

SUBTASK 32-00-00-860-037

> **WARNING** MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Pressurize the hydraulic system A. To pressure it, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-710-002

(2) Do this task: Operational Test of the Transfer Valve, TASK 32-31-71-400-802.

(a) Make sure the landing gear transfer valve operational test is OK.

NOTE: The airplane can be dispatched if the landing gear transfer valve operational test is OK.

SUBTASK 32-00-00-860-038

(3) Remove the pressure from the hydraulic system A. To remove it, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-860-039

(4) Set the nose wheel steering switch to the NORM position.

SUBTASK 32-00-00-480-020

(5) Attach a INOP placard to the nose wheel steering switch.

END OF TASK

TASK 32-00-00-440-808

15. MMEL 32-12 (DDPG) Restoration - Nose Wheel Steering Switch Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Nose Wheel Steering Switch Inoperative.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

C. Procedure

SUBTASK 32-00-00-960-002

(1) Replace the nose wheel steering switch.

SUBTASK 32-00-00-740-005

(2) If the nose wheel steering switch was not the problem, then do these steps to correct the fault:

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.

3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.

2) Find the task number on the same line as the fault description.

3) Go to the task in the FIM and do the steps in the task.

SUBTASK 32-00-00-080-016

(3) Remove the INOP from the nose wheel steering switch.

——— END OF TASK ———

TASK 32-00-00-040-809

16. MMEL 32-13 (DDPG) Preparation - Hydraulic Brake Pressure Indicator Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Hydraulic Brake Pressure Indicator Inoperative.

B. References

Reference	Title
12-15-11 P/B 301	HYDRAULIC BRAKE ACCUMULATOR - SERVICING
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Procedure

SUBTASK 32-00-00-480-021

(1) Make sure the tires have chocks installed around them.

SUBTASK 32-00-00-860-040

(2) Release the parking brakes.

SUBTASK 32-00-00-860-041

(3) Make sure the operative brake indicator pressure (flight deck or wheel well brake accumulator gauge) operates normally:

(a) Pressurize the hydraulic system B to 3000 psi (20,684 kPa). Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

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(b) Make sure that the brake accumulator pressure gauge reads 3000 ±150 psi (20,684 ±1034 kPa).

NOTE: If you pressurize the hydraulic system with an Engine Driven Pump (EDP) or an Electric Motor-Driven Pump (EMDP), make sure that the brake accumulator pressure gauge reads within 150 psi (1034 kPa) of the hydraulic system pressure.

(c) Release the pressure from the hydraulic systems A and B. Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(d) Apply and release the brakes 10 times with approximately 3 seconds between each application.

1) Make sure that the related wheel well brake accumulator gauge pressure indication is within limits after 10 applications (PAGEBLOCK 12-15-11/301 or wheel well placard).

WARNING

MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(e) Pressurize the hydraulic systems A and B. Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

1) Make sure the operative brake indicator is approximately 3000 psi.

SUBTASK 32-00-00-860-042

(4) Set the parking brakes.

SUBTASK 32-00-00-860-043

(5) Release the pressure from the hydraulic systems A and B. Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-080-017

WARNING

DO NOT REMOVE THE DOWNLOCK PINS UNLESS ALL MAINTENANCE AND SERVICING OF THE AIRPLANE IS COMPLETE. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) If all maintenance and servicing of the airplane is complete, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-00-00-860-044

(7) Attach an INOP to the inoperative brake pressure indicator.

END OF TASK

TASK 32-00-00-440-809

17. MMEL 32-13 (DDPG) Restoration - Hydraulic Brake Pressure Indicator Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Hydraulic Brake Pressure Indicator Inoperative.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

C. Procedure

SUBTASK 32-00-00-960-003

(1) Replace the inoperative brake pressure indicator.

SUBTASK 32-00-00-740-006

(2) If the applicable brake pressure indicator was not the problem, then do these steps to correct the fault:

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.

3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.

2) Find the task number on the same line as the fault description.

3) Go to the task in the FIM and do the steps in the task.

SUBTASK 32-00-00-080-018

(3) Remove the INOP placard from the applicable brake pressure indicator.

END OF TASK

TASK 32-00-00-040-811

18. MMEL 32-15 (DDPG) Preparation - Landing Gear Selector Bypass Valve Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Landing Gear Selector Bypass Valve Inoperative.

B. References

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear

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(Continued)

Zone	Area
744	Right Main Landing Gear

D. Procedure

SUBTASK 32-00-00-860-046

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

SUBTASK 32-00-00-480-022

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-480-023

(3) Make sure the tires have chocks installed around them.

SUBTASK 32-00-00-710-003

(4) Make sure the landing gear bypass valve is in the NORMAL position:

(a) Put the landing gear control lever temporarily in the UP position.

(b) Make sure that the landing gear retract actuator tries to extend.

(c) Put the landing gear control lever in the DN position.

SUBTASK 32-00-00-080-019

> **WARNING** DO NOT REMOVE THE DOWNLOCK PINS UNLESS ALL MAINTENANCE AND SERVICING OF THE AIRPLANE IS COMPLETE. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) If all maintenance and servicing of the airplane is complete, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

——— END OF TASK ———

TASK 32-00-00-440-811

19. MMEL 32-15 (DDPG) Restoration - Landing Gear Selector Bypass Valve Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Landing Gear Selector Bypass Valve Inoperative.

B. References

Reference	Title
32-31-51-020-801	Landing Gear Selector Valve Removal (P/B 401)
32-31-51-400-801	Landing Gear Selector Valve Installation (P/B 401)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Procedure

SUBTASK 32-00-00-960-004

(1) Replace the landing gear selector valve. These are the tasks:

(Landing Gear Selector Valve Removal, TASK 32-31-51-020-801), (Landing Gear Selector Valve Installation, TASK 32-31-51-400-801).

SUBTASK 32-00-00-860-047

(2) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

SUBTASK 32-00-00-740-012

(3) If the landing gear selector bypass valve was not the problem, then do these steps to correct the fault:

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.

3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.

2) Find the task number on the same line as the fault description.

3) Go to the task in the FIM and do the steps in the task.

END OF TASK

LOM 411, 426-432, 439, 441, 443, 444, 446, 447, 450-452, 455-457, 461-999

TASK 32-00-00-040-812

20. MMEL 32-16 (DDPG) Preparation - Landing Gear Actuation System Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Landing Gear Actuation System Inoperative.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Consumable Materials

Reference	Description	Specification
G01912	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

D. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Procedure

SUBTASK 32-00-00-480-024

(1) Install the downlock pins in the nose and main landing gear. To install them, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-053

(2) Activate the switch for ALTERNATE GEAR DOWN DISPATCH:

(a) Move the switch for ALTERNATE GEAR DOWN DISPATCH, S01127, to the ALTN position, per the following steps:

NOTE: The switch is located directly inside of the main equipment center, next to the switch for the E/E bay lights.

NOTE: The switch must be pulled from its locked position to move it.

1) Cut the lockwire in the switch guard.

2) Lift the switch guard and move the switch to the ALTN position.

3) Lower the switch guard and lockwire the switch guard using MS20995NC32 lockwire, G01912 and the double twist method.

SUBTASK 32-00-00-480-025

(3) Attach a GEAR LOCKED DOWN placard to the landing gear lever.

END OF TASK

TASK 32-00-00-440-812

21. MMEL 32-16 (DDPG) Restoration - Landing Gear Actuation System Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Landing Gear Actuation System Inoperative.

B. References

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)

C. Consumable Materials

Reference	Description	Specification
G01912	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Procedure

SUBTASK 32-00-00-740-013

(1) Do these steps to correct the fault:

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.

3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.

2) Find the task number on the same line as the fault description.

3) Go to the task in the FIM and do the steps in the task.

SUBTASK 32-00-00-080-020

WARNING DO NOT REMOVE THE DOWNLOCK PINS UNLESS ALL MAINTENANCE AND SERVICING OF THE AIRPLANE IS COMPLETE. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If all maintenance and servicing of the airplane is complete, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-00-00-860-054

(3) Deactivate the switch for ALTERNATE GEAR DOWN DISPATCH:

(a) Move the switch for ALTERNATE GEAR DOWN DISPATCH, S01127, to the NORM position, per the following steps:

NOTE: The switch is located directly inside of the main equipment center, next to the switch for the E/E bay lights.

NOTE: The switch must be pulled from its locked position to move it.

1) Cut the lockwire in the switch guard.

2) Lift the switch guard and move the switch to the NORM position.

3) Lower the switch guard and lockwire the switch guard using MS20995NC32 lockwire, G01912 and the double twist method.

SUBTASK 32-00-00-080-021

(4) Remove the GEAR LOCKED DOWN placard from the landing gear lever.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL

END OF TASK

TASK 32-00-00-040-815

22. MMEL 32-17-01 (DDPG) Preparation - PSEU Fault

A. General

(1) This task gives the maintenance steps to prepare the airplane for flight with a Proximity Switch Electronic Unit (PSEU) fault.

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Preparations for a PSEU Fault

SUBTASK 32-00-00-010-003

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-00-00-740-016

(2) Do the EXISTING FAULTS test on the PSEU Built-In-Test Equipment (BITE) to make sure that there are no active faults on the PSEU:

(a) Push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?.

(b) Push the YES switch.

(c) One of the following messages will be shown:

1) If message “NO FAULTS” is shown, dispatch is allowed without additional procedures.

2) If message “DISPATCH PER MEL” (message number 32-64003) is shown:

a) The dispatch is allowed for 10 days, if one or more of the following message numbers are not shown: 32-62009, 32-62109, 32-62010, 32-62110, or 32-62014.

b) If one of the message numbers 32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 is shown, refer to Master Minimum Equipment List (MMEL) item 32-21.

3) If message “DO NOT DISPATCH” (message number 32-64004) is shown, dispatch is not allowed.

a) If one of the message numbers 32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 is shown, refer to MMEL item 32-21.

SUBTASK 32-00-00-860-050

(3) Push the ON/OFF switch to turn the PSEU display off.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-00-00-410-005

(4) Close this access panel:

Number	Name/Location
112A	Forward Access Door

END OF TASK

TASK 32-00-00-440-815

23. MMEL 32-17-01 (DDPG) Restoration - PSEU Fault

A. General

(1) This task puts the airplane back to its usual condition after operation with a PSEU fault.

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Procedure

SUBTASK 32-00-00-810-008

(1) Correct the fault.

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.

3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.

2) Find the task number on the same line as the fault description.

3) Go to the task in the FIM and do the steps in the task.

SUBTASK 32-00-00-710-004

(2) Make sure the PSEU light comes on when the light switch is pushed then goes off when released.

END OF TASK

TASK 32-00-00-040-819

24. MMEL 32-17-02 (DDPG) Preparation - PSEU Light Inoperative

A. General

(1) This task gives the maintenance steps to prepare the airplane for flight with an inoperative Proximity Switch Electronic Unit (PSEU) Light.

B. Location Zones

Zone	Area
211	Flight Compartment - Left

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Zone	Area
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Preparations for an Inoperative PSEU Light

SUBTASK 32-00-00-010-005

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-00-00-740-018

(2) Do the EXISTING FAULTS test on the PSEU Built-In-Test Equipment (BITE) to make sure that there are no active faults on the PSEU:

(a) Push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?.

(b) Push the YES switch.

(c) One of the following messages will be shown:

1) If message “NO FAULTS” is shown, dispatch is allowed without additional procedures.

2) If message “DISPATCH PER MEL” (message number 32-64003) is shown:

a) The dispatch is allowed for 10 days, if one or more of the following message numbers are not shown: 32-62009, 32-62109, 32-62010, 32-62110, or 32-62014.

b) If one of the message numbers 32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 is shown, refer to Master Minimum Equipment List (MMEL) item 32-21.

3) If message “DO NOT DISPATCH” (message number 32-64004) is shown, dispatch is not allowed.

a) If one of the message numbers 32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 is shown, refer to MMEL item 32-21.

SUBTASK 32-00-00-860-073

(3) Push the ON/OFF switch to turn the PSEU display off.

SUBTASK 32-00-00-410-009

(4) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-00-00-410-010

(5) Attach a LIGHT INOP placard to the PSEU light.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-00-00-440-818

25. MMEL 32-17-02 (DDPG) Restoration - PSEU Light Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with a PSEU light which is inoperative.

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Procedure

SUBTASK 32-00-00-200-004

(1) Make sure the PSEU light comes on when the light switch is pushed then goes off when released.

SUBTASK 32-00-00-080-026

(2) If it is necessary, remove the LIGHT INOP placard from the PSEU light.

——— END OF TASK ———

LOM 411, 426-432, 439, 441, 443, 444, 446, 447, 450-452, 455-457, 461-999

TASK 32-00-00-040-813

26. MMEL 32-18 (DDPG) Preparation - Landing Gear Alternate Extension System Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Landing Gear Alternate Extension System Inoperative.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Consumable Materials

Reference	Description	Specification
G01912	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

D. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Procedure

SUBTASK 32-00-00-480-026

(1) Install the downlock pins in the nose and main landing gear. To install them, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-058

(2) Activate the switch for ALTERNATE GEAR DOWN DISPATCH:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Move the switch for ALTERNATE GEAR DOWN DISPATCH, S1127, to the ALTN position, per the following steps:

NOTE: The switch is located directly inside of the main equipment center, next to the switch for the E/E bay lights.

NOTE: The switch must be pulled from its locked position to move it.

1) Cut the lockwire in the switch guard.
2) Lift the switch guard and move the switch to the ALTN position.
3) Move the guard down and lockwire the switch guard using MS20995NC32 lockwire, G01912 and the double twist method.

SUBTASK 32-00-00-480-027

(3) Attach a GEAR LOCKED DOWN placard to the landing gear lever.

END OF TASK

TASK 32-00-00-440-813

27. MMEL 32-18 (DDPG) Restoration - Landing Gear Alternate Extension System Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Landing Gear Alternate Extension System Inoperative.

B. References

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)

C. Consumable Materials

Reference	Description	Specification
G01912	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

D. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Procedure

SUBTASK 32-00-00-740-014

(1) Do these steps to correct the fault:

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.
3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.
2) Find the task number on the same line as the fault description.
3) Go to the task in the FIM and do the steps in the task.

SUBTASK 32-00-00-080-022

WARNING	DO NOT REMOVE THE DOWNLOCK PINS UNLESS ALL MAINTENANCE AND SERVICING OF THE AIRPLANE IS COMPLETE. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If all maintenance and servicing of the airplane is complete, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-00-00-860-059

(3) Deactivate the switch for ALTERNATE GEAR DOWN DISPATCH:

(a) Move the switch for ALTERNATE GEAR DOWN DISPATCH, S1127, to the NORMAL position, per the following steps:

NOTE: The switch is located directly inside of the main equipment center, next to the switch for the E/E bay lights.

NOTE: The switch must be pulled from its locked position to move it.

1) Cut the lockwire in the switch guard.
2) Lift the switch guard and move the switch to the NORMAL position.
3) Move the guard down and lockwire the switch guard using MS20995NC32 lockwire, G01912 and the double twist method.

SUBTASK 32-00-00-080-023

(4) Remove the GEAR LOCKED DOWN placard from the landing gear lever.

LOM ALL

——— END OF TASK ———

TASK 32-00-00-040-814

28. MMEL 32-19 (DDPG) Preparation - Main Landing Gear Uplock Springs Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Main Landing Gear Uplock Springs Inoperative.

B. References

Reference	Title
32-32-31-400-801	Main Gear Uplock Assembly Installation (P/B 401)

C. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Procedure

SUBTASK 32-00-00-200-001

(1) Do the applicable steps to remove the applicable main landing gear uplock spring (TASK 32-32-31-400-801).

SUBTASK 32-00-00-480-028

(2) Attach an AFTER TAKEOFF - LEAVE UP placard to the landing gear lever.

END OF TASK

TASK 32-00-00-440-814

29. MMEL 32-19 (DDPG) Restoration - Main Landing Gear Uplock Springs Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Main Landing Gear Uplock Springs Inoperative.

B. References

Reference	Title
32-32-31-400-801	Main Gear Uplock Assembly Installation (P/B 401)

C. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Procedure

SUBTASK 32-00-00-420-003

(1) Do the applicable steps to install the applicable main landing gear uplock spring (TASK 32-32-31-400-801).

SUBTASK 32-00-00-740-015

(2) If the main landing gear uplock springs was not the problem, then do these steps to correct the fault:

(a) Find the fault code or description of the fault that occurred.

(b) If you find a fault code, then do these steps:

1) Go to the Fault Code Index in the applicable chapter of the FIM and find the fault code.

NOTE: The first two digits of the fault code is the FIM chapter.

2) Find the task number on the same line as the fault code.

3) Go to the task in the FIM and do the steps in the task.

(c) If you find a description of the fault, then do these steps:

1) Go to the Observed Fault List at the beginning of the FIM and find the best description for the fault.

2) Find the task number on the same line as the fault description.

3) Go to the task in the FIM and do the steps in the task.

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SUBTASK 32-00-00-080-024

(3) Remove the AFTER TAKEOFF - LEAVE UP placard from the landing gear lever.

END OF TASK

TASK 32-00-00-040-816

30. MMEL 32-20 (DDPG) Preparation - Landing Gear Frangible Fitting Missing or Broken

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Landing Gear Frangible Fitting Missing or Broken.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Procedure

SUBTASK 32-00-00-480-029

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-051

(2) Remove the pressure from the hydraulic systems A. To remove it, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-020-008

(3) Remove the damaged frangible fitting (If not missing) from the union on the frangible fitting assembly.

SUBTASK 32-00-00-420-004

(4) Install a standard BACC14AD06JL or equivalent cap on the union of the frangible fitting assembly that is rated for 3000 psi (20,684 kPa).

END OF TASK

TASK 32-00-00-440-816

31. MMEL 32-20 (DDPG) Restoration - Landing Gear Frangible Fitting Missing or Broken

A. General

(1) This task puts the airplane back to its usual condition after operation with the Landing Gear Frangible Fitting Missing or Broken.

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B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-52-400-802	Main Gear Frangible Fitting Assembly Installation (P/B 401)

C. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Procedure

SUBTASK 32-00-00-480-030

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-052

(2) Remove the pressure from the hydraulic systems A. To remove it, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-020-009

(3) Remove the cap from the hydraulic line.

SUBTASK 32-00-00-420-005

(4) Replace the frangible fitting, do this task: Main Gear Frangible Fitting Assembly Installation, TASK 32-32-52-400-802.

——— END OF TASK ———

TASK 32-00-00-040-817

32. MMEL 32-21 (DDPG) Preparation - Flap Landing Warning Switch S138 Contacts Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Flap Landing Warning Switch S138 Contacts Inoperative.

(2) Failure of the S138 switch is indicated by illumination of the PSEU fault light accompanied by fault message numbers 32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 shown in the PSEU BITE.

(3) Each fault message indicates a high resistance short to ground or disagreement between contacts as shown below:

- 32-62009/32-62109 D10984 pin 48 S138 contact “3” wire W8124-A-CC
- 32-62010/32-62110 D10984 pin 49 S138 contact “18” wire W8124-A-UU
- 32-62014 Disagreement between contacts “3” and “18”

(4) For the S138 switch with the connector attached to D14730:

- 32-62009/32-62109 D10984 pin 48 S138 contact “C” wire W8124-0506-20

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- 32-62010/32-62110 D10984 pin 49 S138 contact “U” wire W8124-0511-20
- 32-62014 Disagreement between contacts “C” and “U”

B. References

Reference	Title
27-51-00-040-801	Trailing Edge Flap System Deactivation (P/B 201)
27-51-00-440-801	Trailing Edge Flap System Reactivation (P/B 201)
27-51-00-860-804	Retract the Trailing Edge Flaps (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
WDM 32-64-21	Wiring Diagram Manual

C. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Preparations for a Flap Landing Warning Switch S138 Contacts Inoperative

SUBTASK 32-00-00-860-061

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-00-00-860-062

(2) If the trailing edge flaps are not in the retracted position, do this task: Retract the Trailing Edge Flaps, TASK 27-51-00-860-804.

SUBTASK 32-00-00-040-004

(3) Do this task: Trailing Edge Flap System Deactivation, TASK 27-51-00-040-801.

SUBTASK 32-00-00-860-063

(4) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-00-00-040-009

(5) For a S138 switch which is not connected to D14730.

(a) Select an available set of contacts.

1) Refer to the WDM 32-64-21 and the wire list for available contacts.

2) Verify that the normally open contact exhibits better than 10.0 mega-ohms isolation resistance to ground and to center tap.

(b) Connect the wire to the selected set of contacts using approved waterproof splices per Standard Wiring Practices Manual.

(c) Cap and stow the deactivated wires from the S138 switch.

SUBTASK 32-00-00-040-010

(6) For a S138 switch with connector attached to D14730.

(a) Select an available set of contacts.

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1) Refer to the WDM 32-64-21 and the wire list for available contacts.
2) Verify that the normally open contact exhibits better than 10.0 mega-ohms isolation resistance to ground and to center tap.

NOTE: Available set may be any of the switch NO and CT contacts on any available switch (i.e.: D and F, K and M, N and R).

(b) Insert the connector pins removed from A and C, or U and S, into whichever set of connector pin locations previously selected above.

(c) Plug connector holes with removed plugs from pins at newly used set of contacts.

SUBTASK 32-00-00-860-064

(7) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-00-00-440-001

(8) Do this task: Trailing Edge Flap System Reactivation, TASK 27-51-00-440-801.

SUBTASK 32-00-00-720-001

(9) Do the interface test between the S138 switch and the PSEU below:

(a) Make sure the PSEU BITE display is off.
(b) Press the ON/OFF button.
(c) The display will show EXISTING FAULTS?
(d) Press the NO button.
(e) The display will show FAULT HISTORY?
(f) Press the NO button.
(g) The display will show GROUND TESTS?
(h) Press the NO button.
(i) The display will show AIR/GND OVRD?
(j) Press the NO button.
(k) The display will show OTHER FUNCTNS?
(l) Press the YES button.
(m) The display will show T/O WARN REPORT?
(n) Press the NO button.
(o) The display will show LGTV REPORT?
(p) Press the NO button.
(q) The display will show SENSOR RIGGING?
(r) Press the NO button.
(s) The display will show I/O MONITOR?
(t) Press the YES button.
(u) The display will show SENSORS?
(v) Press the DOWN ARROW button.
(w) The display will show INPUTS?

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(x) Press the YES button.

(y) The display will show CONN D10982?

(z) Press the NO button.

(aa) The display will show CONN D10984?

(ab) Press the YES button.

(ac) Using the UP and/or DOWN ARROW find PIN 48.

1) Make sure that the PSEU BITE display shows PIN 48 as NO GND.

(ad) Use DOWN ARROW to find PIN 49.

1) Make sure that the PSEU BITE display shows PIN 49 as NO GND.

(ae) Move the Flaps lever to "15".

1) Make sure that the PSEU BITE display shows PIN 49 as GND.

(af) Use the DOWN ARROW to find PIN 48.

1) Make sure that the PSEU BITE display shows PIN 48 as GND.

SUBTASK 32-00-00-860-065

(10) Do these steps to return the PSEU to normal:

(a) Press the ON/OFF button.

(b) The display will show TURN OFF DISPLAY?

(c) Press the YES button.

1) Make sure that the display turns off.

SUBTASK 32-00-00-080-025

(11) If the downlock pins are no longer necessary, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

END OF TASK

TASK 32-00-00-440-819

33. MMEL 32-21 (DDPG) Restoration - Flap Landing Warning Switch S138 Contacts Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with a Flap Landing Warning Switch S138 Contacts Inoperative.

B. References

Reference	Title
27-51-00-040-801	Trailing Edge Flap System Deactivation (P/B 201)
27-51-00-440-801	Trailing Edge Flap System Reactivation (P/B 201)
27-51-00-860-804	Retract the Trailing Edge Flaps (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)

C. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

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D. Procedure

SUBTASK 32-00-00-860-066

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-00-00-860-067

(2) If the trailing edge flaps are not in the retracted position, do this task: Retract the Trailing Edge Flaps, TASK 27-51-00-860-804.

SUBTASK 32-00-00-040-006

(3) Do this task: Trailing Edge Flap System Deactivation, TASK 27-51-00-040-801.

SUBTASK 32-00-00-860-068

(4) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-00-00-200-003

(5) Find the S138 contacts.

(a) Refer to the Wiring Diagram Manual 32-64-21 to find the initial S138 contacts.

(b) Verify that the initial contact exhibits better than 10.0 mega-ohms isolation resistance to ground and to center tap.

SUBTASK 32-00-00-400-002

(6) Connect the wire to the initial set of contacts using approved waterproof splices per Standard Wiring Practices Manual.

SUBTASK 32-00-00-040-007

(7) Cap and stow the deactivated wires.

SUBTASK 32-00-00-860-069

(8) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-00-00-440-002

(9) Do this task: Trailing Edge Flap System Reactivation, TASK 27-51-00-440-801.

SUBTASK 32-00-00-720-002

(10) Do the interface test between the S138 switch and the PSEU below:

(a) Make sure the PSEU BITE display is off.

(b) Press the ON/OFF button.

(c) The display will show EXISTING FAULTS?

(d) Press the NO button.

(e) The display will show FAULT HISTORY?

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(f) Press the NO button.
(g) The display will show GROUND TESTS?
(h) Press the NO button.
(i) The display will show AIR/GND OVRD?
(j) Press the NO button.
(k) The display will show OTHER FUNCTNS?
(l) Press the YES button.
(m) The display will show T/O WARN REPORT?
(n) Press the NO button.
(o) The display will show LGTV REPORT?
(p) Press the NO button.
(q) The display will show SENSOR RIGGING?
(r) Press the NO button.
(s) The display will show I/O MONITOR?
(t) Press the YES button.
(u) The display will show SENSORS?
(v) Press the DOWN ARROW button.
(w) The display will show INPUTS?
(x) Press the YES button.
(y) The display will show CONN D10982?
(z) Press the NO button.
(aa) The display will show CONN D10984?
(ab) Press the YES button.
(ac) Using the UP and/or DOWN ARROW find PIN 48.
1) Make sure that the PSEU BITE display shows PIN 48 as NO GND.
(ad) Use DOWN ARROW to find PIN 49.
1) Make sure that the PSEU BITE display shows PIN 49 as NO GND.
(ae) Move the Flaps lever to "15".
1) Make sure that the PSEU BITE display shows PIN 49 as GND.
(af) Use the DOWN ARROW to find PIN 48.
1) Make sure that the PSEU BITE display shows PIN 48 as GND.

SUBTASK 32-00-00-860-070

(11) Do these steps to return the PSEU to normal:
(a) Press the ON/OFF button.
(b) The display will show TURN OFF DISPLAY?
(c) Press the YES button.
1) Make sure that the display turns off.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-00-00-040-820

34. MMEL 32-22-01-01A (DDPG) Preparation - Tail Skid Secured in Retracted Position and Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Tail Skid Secured in the Retracted Position and Inoperative.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205
STD-1049	Stepladder - 12 foot

D. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

F. Preparation for the Tail Skid Secured in the Retracted Position and Inoperative

SUBTASK 32-00-00-480-046

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-020-011

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(2) Remove the split rings and REMOVE BEFORE FLIGHT streamer from the tail skid lockout pin, SPL-6254.

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LOM 465-999 (Continued)

SUBTASK 32-00-00-860-135

(3) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-860-074

(4) Set the Tail Skid Extend Switch, located on the front face of the J23 Box, to the RETRACT position.

(a) Make sure that the tail skid moves to the retracted position within 30 seconds.

SUBTASK 32-00-00-860-075

(5) Remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-010-006

(6) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-00-00-410-017

(7) Use a 12 foot stepladder, STD-1049, or equivalent to get access to the tail skid assembly.

SUBTASK 32-00-00-010-008

(8) To get access to the tail skid assembly, open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-210-003

(9) Do a general visual inspection of the tail skid hydraulic actuator for evidence of leaks or damage.

SUBTASK 32-00-00-210-004

(10) Do a general visual inspection of the tail skid linkage for evidence of corrosion or damage.

SUBTASK 32-00-00-420-006

(11) Install the modified tail skid lockout pin, SPL-6254, retractable tailskid lockout pin, in the lock links for the tail skid.

NOTE: When the tail skid is in the retracted position the tail skid lockout pin, SPL-6254, is installed from the right to the left from inside the aft unpressurized compartment.

NOTE: If the tail skid lockout pin, SPL-6254, will not go into the lock links, it is possible that an adjustment of the lock links is necessary.

SUBTASK 32-00-00-420-007

(12) Install the lockpin, part of the tail skid lockout pin, SPL-6254, through the end of the tail skid lockout pin, SPL-6254.

SUBTASK 32-00-00-420-008

(13) Make sure that the lockpin is closed.

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LOM 465-999 (Continued)

SUBTASK 32-00-00-410-011

(14) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-860-076

(15) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

END OF TASK

TASK 32-00-00-440-820

35. MMEL 32-22-01-01A (DDPG) Restoration - Tail Skid Secured in Retracted Position and Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with a Tail Skid Secured in the Retracted Position and Inoperative.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205
STD-1049	Stepladder - 12 foot

D. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

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LOM 465-999 (Continued)

F. Procedure

> **WARNING** DO NOT TOUCH THE DUCT FOR APU BLEED AIR WHEN YOU INSTALL THE LOCKOUT PIN FOR THE TAIL SKID. IT GETS VERY HOT. HOT DUCTS CAN BURN YOU.

SUBTASK 32-00-00-480-032

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-078

(2) Remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-010-009

(3) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-00-00-410-016

(4) Use a 12 foot stepladder, STD-1049 or equivalent to get access to the tail skid assembly.

SUBTASK 32-00-00-010-011

(5) To get access to the tail skid assembly, open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-080-028

(6) Remove the lockpin from the tail skid lockout pin, SPL-6254.

SUBTASK 32-00-00-080-029

(7) Remove the tail skid lockout pin, SPL-6254 from the lock links for the tail skid.

SUBTASK 32-00-00-410-012

(8) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-860-079

(9) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-00-00-860-080

(10) If it is necessary, supply hydraulic power, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-860-081

(11) If it is necessary, attach the split rings and the REMOVE BEFORE FLIGHT streamer to the downlock pin.

END OF TASK

TASK 32-00-00-040-821

36. MMEL 32-22-01-01B (DDPG) Preparation - Tail Skid Secured in Extended Position and Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Tail Skid Secured in the Extended Position and Inoperative.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205
STD-1049	Stepladder - 12 foot

D. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

F. Preparation for the Tail Skid Secured in the Extended Position and Inoperative

SUBTASK 32-00-00-480-047

WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-00-00-020-012

(2) Remove the split rings and REMOVE BEFORE FLIGHT streamer from the tail skid lockout pin, SPL-6254.

SUBTASK 32-00-00-860-136

(3) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-860-082

WARNING DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(4) Set the Tail Skid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

(a) Make sure that the tail skid moves to the extended position within 30 seconds.

SUBTASK 32-00-00-860-083

(5) Remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-010-012

(6) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-00-00-410-015

(7) Use a 12 foot stepladder, STD-1049, or equivalent to get access to the tail skid assembly.

SUBTASK 32-00-00-010-014

(8) To get access to the tail skid assembly, open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-210-005

(9) Do a general visual inspection of the tail skid hydraulic actuator for evidence of leaks or damage.

SUBTASK 32-00-00-210-006

(10) Do a general visual inspection of the tail skid linkage for evidence of corrosion or damage.

SUBTASK 32-00-00-420-009

(11) Install the modified tail skid lockout pin, SPL-6254, in the lock links for the tail skid.

NOTE: When the tail skid is in the extended position the tail skid lockout pin, SPL-6254, is installed from the left to the right by reaching between the drag lever skirt and the fairing.

NOTE: If the tail skid lockout pin, SPL-6254, will not go into the lock links, it is possible that an adjustment of the lock links is necessary.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-00-00-420-010

(12) Install the lockpin, part of the tail skid lockout pin, SPL-6254, through the end of the tail skid lockout pin, SPL-6254.

SUBTASK 32-00-00-420-011

(13) Make sure that the lockpin is closed.

SUBTASK 32-00-00-410-013

(14) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-860-084

(15) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

END OF TASK

TASK 32-00-00-440-821

37. MMEL 32-22-01-01B (DDPG) Restoration - Tail Skid Secured in Extended Position and Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with a Tail Skid Secured in the Extended Position and Inoperative.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205
STD-1049	Stepladder - 12 foot

D. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

F. Procedure

> **WARNING** DO NOT TOUCH THE DUCT FOR APU BLEED AIR WHEN YOU INSTALL THE LOCKOUT PIN FOR THE TAIL SKID. IT GETS VERY HOT. HOT DUCTS CAN BURN YOU.

SUBTASK 32-00-00-480-034

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-087

(2) Remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-010-015

(3) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-00-00-010-016

(4) Use a 12 foot stepladder, STD-1049 or equivalent to get access to the tail skid assembly.

SUBTASK 32-00-00-410-014

(5) To get access to the tail skid assembly, open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-080-030

(6) Remove the lockpin from the tail skid lockout pin, SPL-6254.

SUBTASK 32-00-00-080-031

(7) Remove the tail skid lockout pin, SPL-6254 from the lock links for the tail skid.

SUBTASK 32-00-00-410-018

(8) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-860-088

(9) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-00-00-860-089

(10) If it is necessary, supply hydraulic power, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-860-090

(11) If it is necessary, attach the split rings and the REMOVE BEFORE FLIGHT streamer to the downlock pin.

END OF TASK

TASK 32-00-00-040-822

38. MMEL 32-22-01-02 (DDPG) Preparation - Cartridge Core Assembly Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Cartridge Core Assembly Inoperative.

B. References

Reference	Title
05-51-32-210-801	Tail Strike Inspection (P/B 201)
05-51-32-210-802	Tail Skid Inspection (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205
STD-1049	Stepladder - 12 foot

D. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

F. Prepare for the Cartridge Core Assembly Inoperative.

SUBTASK 32-00-00-210-007

(1) Inspect the tail area for damage.

(a) Do this task: Tail Strike Inspection, TASK 05-51-32-210-801.

(b) Do this task: Tail Skid Inspection, TASK 05-51-32-210-802.

NOTE: Dispatch is not allowed if internal or external damage is found.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-00-00-480-048

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-020-013

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(3) Remove the split rings and REMOVE BEFORE FLIGHT streamer from the tail skid lockout pin, SPL-6254.

SUBTASK 32-00-00-860-137

(4) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-860-091

(5) Set the Tail Skid Extend Switch, located on the front face of the J23 Box, to the RETRACT position.

(a) Make sure that the tail skid moves to the retracted position within 30 seconds.

SUBTASK 32-00-00-860-092

(6) Remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-010-017

(7) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-00-00-410-019

(8) Use a 12 foot stepladder, STD-1049, or equivalent to get access to the tail skid assembly.

SUBTASK 32-00-00-010-018

(9) To get access to the tail skid assembly, open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-210-008

(10) Do a general visual inspection of the tail skid hydraulic actuator for evidence of leaks or damage.

SUBTASK 32-00-00-210-009

(11) Do a general visual inspection of the tail skid linkage for evidence of corrosion or damage.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-00-00-420-012

(12) Install the modified tail skid lockout pin, SPL-6254, retractable tailskid lockout pin, in the lock links for the tail skid.

NOTE: When the tail skid is in the retracted position the tail skid lockout pin, SPL-6254, is installed from the right to the left from inside the aft unpressurized compartment.

NOTE: If the tail skid lockout pin, SPL-6254, will not go into the lock links, it is possible that an adjustment of the lock links is necessary.

SUBTASK 32-00-00-420-013

(13) Install the lockpin, part of the tail skid lockout pin, SPL-6254, through the end of the tail skid lockout pin, SPL-6254.

SUBTASK 32-00-00-420-014

(14) Make sure that the lockpin is closed.

SUBTASK 32-00-00-410-020

(15) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-860-093

(16) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

——— END OF TASK ———

TASK 32-00-00-440-822

39. MMEL 32-22-01-02 (DDPG) Restoration - Cartridge Core Assembly Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Cartridge Core Assembly Inoperative.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205
STD-1049	Stepladder - 12 foot

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LOM 465-999 (Continued)

D. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

F. Procedure

> **WARNING** DO NOT TOUCH THE DUCT FOR APU BLEED AIR WHEN YOU INSTALL THE LOCKOUT PIN FOR THE TAIL SKID. IT GETS VERY HOT. HOT DUCTS CAN BURN YOU.

SUBTASK 32-00-00-480-036

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-00-860-096

(2) Remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-00-00-010-019

(3) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-00-00-410-021

(4) Use a 12 foot stepladder, STD-1049 or equivalent to get access to the tail skid assembly.

SUBTASK 32-00-00-410-022

(5) To get access to the tail skid assembly, open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-080-032

(6) Remove the lockpin from the tail skid lockout pin, SPL-6254.

SUBTASK 32-00-00-080-033

(7) Remove the tail skid lockout pin, SPL-6254 from the lock links for the tail skid.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-00-00-410-023

(8) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-00-00-860-097

(9) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-00-00-860-098

(10) If it is necessary, supply hydraulic power, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-00-00-860-099

(11) If it is necessary, attach the split rings and the REMOVE BEFORE FLIGHT streamer to the downlock pin.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

(1) An installation of the downlock pins for the main and the nose landing gear

(2) A removal of the downlock pins for the main and the nose landing gear.

B. The downlock pins are items of safety equipment. You install the downlock pins to make sure the landing gear does not retract when you do maintenance on the airplane.

C. You also install the downlock pins (with the safety hardware) when the airplane must fly with the landing gear locked in the extended position.

TASK 32-00-01-480-801

2. Landing Gear Downlock Pins Installation

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1880	Downlock Equipment - NLG and MLG Part #: C32026-15 Supplier: 81205 Opt Part #: C32026-1 Supplier: 81205 Opt Part #: C32026-6 Supplier: 81205
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205

C. Location Zones

Zone	Area
LOM 465-999	
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right
LOM ALL	
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Installation

SUBTASK 32-00-01-860-001

(1) Make sure the nose and main landing gear are down and locked.

SUBTASK 32-00-01-860-002

(2) Make sure that the control lever for the landing gear on the center instrument panel is in the DN position.

> **WARNING**
> MAKE SURE THAT THE NOSE AND MAIN LANDING GEAR ARE ALL IN THE DOWN AND LOCKED POSITION. THEN TRY TO INSTALL THE GROUND LOCK ASSEMBLY IN THE NOSE AND MAIN LANDING GEAR. IF THE NOSE AND MAIN LANDING GEAR ARE NOT IN THE DOWN AND LOCKED POSITION, THE LANDING GEAR COULD RETRACT. THIS CAN CAUSE INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(a) Attach a DO-NOT-OPERATE tag on the control lever for the landing gear.

F. Landing Gear Downlock Pins Installation

SUBTASK 32-00-01-480-001

(1) Do the steps below for each of the main landing gear to install the downlock pin downlock equipment, SPL-1880 [4]:

(a) If the airplane must fly with the main landing gear locked in the extended position, do the step below:

1) Remove the split rings and the REMOVE BEFORE FLIGHT streamer from each of the downlock pin downlock equipment, SPL-1880 [4].

(b) Put the downlock pin downlock equipment, SPL-1880 [4] through the upper [1] and the lower [3] lock links for the main landing gear.

NOTE: If the downlock pin will not go into the lock links, it is possible an adjustment of the lock links is necessary.

(c) If you installed the downlock pin downlock equipment, SPL-1880 [4] for maintenance, make sure the REMOVE BEFORE FLIGHT streamers are extended and can be easily seen.

SUBTASK 32-00-01-480-002

(2) Do the steps below to install the downlock pin downlock equipment, SPL-1880 [21] for the nose landing gear:

(a) If the airplane must fly with the landing gear locked in the extended position, do the step below:

1) Remove the split rings and the REMOVE BEFORE FLIGHT streamer from the downlock pin downlock equipment, SPL-1880 [21].

(b) Put the downlock pin downlock equipment, SPL-1880 [21] through the forward [24] and the aft [22] lock links for the nose landing gear.

NOTE: If the downlock pin, will not go into the lock links, it is possible an adjustment of the lock links is necessary.

(c) If you installed the downlock pin downlock equipment, SPL-1880 [21] for maintenance, make sure the REMOVE BEFORE FLIGHT streamer is extended and can be easily seen.

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SUBTASK 32-00-01-480-003

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) To install the lever lock NLG towing lever pin, SPL-1499 [25] for towing the airplane, do the steps below:

NOTE: The towing lever lets you depressurize the nose wheel steering system. Installation of the NLG towing lever pin, SPL-1499 in the towing lever lets you tow the airplane without depressurizing the hydraulic system A.

(a) Move the towing lever [27] forward to the tow position.

(b) Put the lever lock NLG towing lever pin, SPL-1499 [25] through the pin hole in the towing lever [27] to hold the lever in the towing position.

(c) If you installed the lever lock NLG towing lever pin, SPL-1499 [25] for maintenance, make sure the REMOVE BEFORE FLIGHT streamer is extended and can be easily seen.

(d) If the airplane must fly with the landing gear locked in the extended position, do the steps below:

1) Remove the lever lock NLG towing lever pin, SPL-1499 [25] from the towing lever [27] for the nose wheel steering mechanism.

LOM 465-999

SUBTASK 32-00-01-480-004

(4) For airplanes with a two position tail skid, do the steps below to install the lockout pin:

NOTE: The tail skid can be locked in either the retracted position or the extended position.

NOTE: It is only necessary to install the tail skid lockout pin, SPL-6254 if there is to be maintenance done on or near the tail skid or if the airplane will be dispatched with the tail skid locked in the extended or retracted position.

> **WARNING** DO NOT TOUCH THE DUCT FOR APU BLEED AIR WHEN YOU INSTALL THE LOCKOUT PIN FOR THE TAIL SKID. IT GETS VERY HOT. HOT DUCTS CAN BURN YOU.

(a) Remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805

(b) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

(c) If the airplane must fly with the tail skid locked in the extended or retracted position, do the step below:

1) Remove the split rings and the REMOVE BEFORE FLIGHT streamer from the retractable tail skid lockout pin, SPL-6254.

(d) To get access to the tail skid assembly, do this step:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

(e) Install the retractable tail skid lockout pin, SPL-6254, in the lock links for the tail skid.

NOTE: It is not necessary to remove the fairing to install the tail skid lockout pin, SPL-6254 when the tail skid is in the extended position.

NOTE: If the retractable tail skid lockout pin, SPL-6254, will not go into the lock links, it is possible an adjustment of the lock links is necessary.

1) When the tail skid is in the retracted position the lockout pin is installed from the right to the left from inside the aft unpressurized compartment.

2) When the tail skid is in the extended position the lockout pin is installed from the left to the right by reaching between the drag lever skirt and the fairing.

(f) If the airplane must fly with the tail skid locked in the extended or retracted position, do the steps below:

1) Install the lockpin, part of the retractable tail skid lockout pin, SPL-6254, through the end of the retractable tail skid lockout pin, SPL-6254.

2) Make sure the lockpin is closed.

(g) If you installed the lockout pin for maintenance, make sure the REMOVE BEFORE FLIGHT streamer is extended and can be easily seen.

(h) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

(i) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

LOM ALL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

SIDE STRUT ASSEMBLY

A

G25653 S0006574687_V2

Main Landing Gear Downlock Pin Installation
Figure 201/32-00-01-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DOWNLOCK STRUT

B

G25665 S0006574688_V2

Main Landing Gear Downlock Pin Installation
Figure 201/32-00-01-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G25612 S0006574689_V2

Nose Landing Gear Downlock Pins Installation
Figure 202/32-00-01-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Downlock Pins Installation
Figure 202/32-00-01-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

J68482 S0000174522_V3

Tail Skid Lockout Pin Installation
Figure 203/32-00-01-990-804 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID LOCK LINKS

B

J68732 S0000174523_V3

Tail Skid Lockout Pin Installation
Figure 203/32-00-01-990-804 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U77864 S0000217026_V3

Tail Skid Lockout Pin Installation
Figure 203/32-00-01-990-804 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-00-01-080-801

3. Landing Gear Downlock Pins Removal

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1880	Downlock Equipment - NLG and MLG Part #: C32026-15 Supplier: 81205 Opt Part #: C32026-1 Supplier: 81205 Opt Part #: C32026-6 Supplier: 81205

C. Location Zones

Zone	Area
LOM 465-999	
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right
LOM ALL	
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

E. Prepare for the Removal

SUBTASK 32-00-01-860-003

(1) Make sure that the control lever for the landing gear on the center instrument panel is in the DN position.

> **WARNING**
> MAKE SURE THAT THE NOSE AND MAIN LANDING GEAR ARE ALL IN THE DOWN AND LOCKED POSITION. THEN TRY TO INSTALL THE GROUND LOCK ASSEMBLY IN THE NOSE AND MAIN LANDING GEAR. IF THE NOSE AND MAIN LANDING GEAR ARE NOT IN THE DOWN AND LOCKED POSITION, THE LANDING GEAR COULD RETRACT. THIS CAN CAUSE INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(a) Attach a DO-NOT-OPERATE tag on the control lever for the landing gear.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Landing Gear Downlock Pins Removal

SUBTASK 32-00-01-080-001

(1) Do the steps below for each main landing gear to remove the downlock pins downlock equipment, SPL-1880 [4]:

(a) Remove the downlock pin downlock equipment, SPL-1880 [4] from the upper [1] and the lower [3] lock links.

(b) If it is necessary, attach the split rings and the REMOVE BEFORE FLIGHT streamer to the downlock pins downlock equipment, SPL-1880 [4].

SUBTASK 32-00-01-080-002

(2) Do the steps below to remove the downlock pin downlock equipment, SPL-1880 [21] for the nose landing gear:

(a) Remove the downlock pin downlock equipment, SPL-1880 [21] from the forward [24] and the aft [22] lock links for the nose landing gear.

(b) If it is necessary, attach the split rings and the REMOVE BEFORE FLIGHT streamer to the downlock pin downlock equipment, SPL-1880 [21].

SUBTASK 32-00-01-080-003

(3) Do the steps below to remove the lever lock NLG towing lever pin, SPL-1499 [25] from the towing lever:

(a) Remove the lever lock NLG towing lever pin, SPL-1499 [25] from the towing lever [27] for the nose wheel steering mechanism.

(b) If it is necessary, attach the split rings and the REMOVE BEFORE FLIGHT streamer to the lever lock NLG towing lever pin, SPL-1499 [25].

SUBTASK 32-00-01-010-001

(4) Remove the DO-NOT-OPERATE tag on the control lever for the landing gear.

LOM 465-999

SUBTASK 32-00-01-080-004

(5) Do the steps below to remove the lockout pin for the tail skid:

> **WARNING** DO NOT TOUCH THE DUCT FOR APU BLEED AIR WHEN YOU INSTALL THE LOCKOUT PIN FOR THE TAIL SKID. IT GETS VERY HOT. HOT DUCTS CAN BURN YOU.

(a) Remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805

(b) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

(c) To get access to the tail skid assembly, do this step:

Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

(d) Remove the lockout pin, part of the retractable tailskid lockout pin, if it is installed.

(e) Remove the retractable tailskid lockout pin, from the lock links for the tail skid.

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LOM 465-999 (Continued)

(f) If it is necessary, attach the split rings and the REMOVE BEFORE FLIGHT streamer to the downlock pin.

(g) Remove the DO-NOT-OPERATE tag on the control lever for the landing gear before further flight.

(h) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

(i) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

END OF TASK

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LANDING GEAR INNER CYLINDER CHROME - INSPECTION

1. General

A. This procedure provides instructions to examine the chrome surface of the landing gear inner cylinder.

B. This procedure is applicable to the nose landing gear and the main landing gear.

TASK 32-00-10-211-801

2. Landing Gear Inner Cylinder Chrome Inspection

A. References

Reference	Title
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-00-10-100-801	Landing Gear Inner Cylinder Chrome Cleaning - with Strut Extended (P/B 701)
32-00-10-300-801	Landing Gear Inner Cylinder Chrome Repair (P/B 801)
32-11-21-200-801	Main Landing Gear Shock Strut Seal Leakage Check (P/B 801)
32-11-21-960-802	Replace the Active and the Spare Seals (P/B 801)
32-11-21-960-803	Replace the Scraper Ring (P/B 801)
32-21-11-200-801	Nose Landing Gear Shock Strut Seal Leakage Check (P/B 801)
32-21-11-960-802	Replace the Active Seals and Spare Seals (P/B 801)
32-21-11-960-803	Scraper Ring Replacement (P/B 801)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-15067	Laser Gauge Sensor Part #: TS800-F08 Supplier: 1L0G0
COM-15068	Portable Coating Thickness Analyzer Part #: 1007330 Supplier: 61325 Part #: 1007331 Supplier: 61325 Opt Part #: 605-022 Supplier: 61325 Opt Part #: 605-023 Supplier: 61325

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

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D. Prepare for the procedure

SUBTASK 32-00-10-490-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-10-212-002

(2) Inspect the scraper ring and shock strut seals for damage.

(a) Visually examine the chrome surface of the inner cylinder before you clean it.

NOTE: If you find vertical streaks of fluid or accumulated debris on the chrome surface, it is an indication that part of the scraper ring may be defective.

(b) Make sure the scraper ring is in the installed position. Normal operation can force the scraper ring down the inner cylinder.

NOTE: A mirror and flashlight can help you to examine the scraper ring. Put the mirror below the outer cylinder and against the inner cylinder to see the condition and position of the scraper ring.

(c) If one of the two inspections finds a fault with the scraper ring, do the steps that follow:

1) Examine the shock strut for seal leakage (TASK 32-11-21-200-801 or TASK 32-21-11-200-801).

2) Deflate the strut and drain the oil (TASK 12-15-31-610-802TASK 12-15-41-610-802).

3) Disconnect the gland nut from the outer cylinder (TASK 32-11-21-960-802 or TASK 32-21-11-960-802), then lower the gland nut to examine the scraper ring.

4) If the scraper ring is damaged then replace the scraper ring with a new production scraper ring (TASK 32-11-21-960-802 or TASK 32-21-11-960-802.

NOTE: This task requires the removal of the inner cylinder from the outer cylinder.

a) If replacement of the scraper ring is required and removal of the inner cylinder is not possible, the installation of a split scraper ring can be used as a temporary repair (Replace the Scraper Ring, TASK 32-11-21-960-803 or Scraper Ring Replacement, TASK 32-21-11-960-803).

NOTE: The installation of a split scraper ring should be replaced with a new scraper ring when the landing gear is disassembled for other maintenance or overhaul.

(d) Examine the shock strut for seal leakage (TASK 32-11-21-200-801 or TASK 32-21-11-200-801).

SUBTASK 32-00-10-615-002

(3) Do this task: Landing Gear Inner Cylinder Chrome Cleaning - with Strut Extended, TASK 32-00-10-100-801.

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E. Procedure

SUBTASK 32-00-10-212-001

(1) Examine the chrome surface on the outer diameter of the shock strut inner cylinder:

NOTE: Chrome plating on large diameter parts will show very small and narrow lines that look like cracks. These lines (chicken-wire cracks) naturally occur when the chrome plate was initially applied on the base metal. When you look at these parts in dim light or with a light source angled to the surface for the inspection, you will see these lines.

(a) Shine light at an angle to the chrome surface of the inner cylinder.

NOTE: You can use a flashlight for this check.

(b) Look at the surface from different directions to make sure you see all of the cracks or scratches.

NOTE: Do not use a magnifying glass to do this inspection. A scratch on the chrome will have sharp edges along its length and can be seen without the aide of a magnifying glass or plastic scraper. A wide crack on the chrome surface has a gradual contour to its edges which makes it difficult to see and requires the use of the plastic scraper to identify.

(c) Move the sharp edge of a new hard plastic scraper perpendicular over all the exposed chrome plated surface with a smooth movement and light hand pressure.

NOTE: You will feel a "grab" or a "catch" when you go over a wide crack or scratch with this method. Make sure the plastic scraper is new, as used scrapers will not satisfactorily find the wide cracks.

(d) If you see any possible area of corrosion, chipping, lifting of the chrome plate, or if you felt a wide crack with the plastic scraper, reinspect the area with a metal dental explorer. Move the sharp point of the explorer with medium hand pressure to go over the area of suspected damage. Go over the area with the dental explorer from multiple directions. If the chrome is lifting and/or loose try to pick it off with the metal explorer.

NOTE: If you feel a sudden high resistance when you go over the area, but do not see signs of possible corrosion, then this is a site with a wide crack. It is an area that must have more protection and be closely monitored. Repair this area with the crack repair procedure. If you are able to remove or lift small pieces of chrome plate from the base metal, if there are bubbles in the chrome, or if the crack extends to the base metal the inner cylinder is not serviceable.

(2) If you find scratches or wide cracks, do the steps that follow:

(a) Look for one or more of the conditions that follow, if any of the conditions that follow are present then the inner cylinder is not serviceable:

1) Corrosion exists in the damaged area of the chrome.

NOTE: You must use a 4x (minimum) magnifier to examine the area of damage.

2) Poor chrome bonds with the base metal.

3) Bubbles in the chrome plating.

4) An area of chrome plate that moves above the smooth surface of the adjacent chrome plate when you move the dental explorer across it.

5) Chrome plate that comes off in flakes when you move the dental explorer over the chrome plate.

(b) Make sure the scratches or wide cracks have not penetrated to the base metal of the strut.

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1) Repair the scratches on the chrome surface (TASK 32-00-10-300-801), if identified.

(c) If the base metal is exposed you must measure the depth of the damage.

(d) Replace or overhaul the inner cylinder, if any of these conditions are present:

1) The measured depth of damage to the base metal exceeds 0.0005 in. (0.0127 mm), excluding chrome thickness.

a) Measure the coating thickness using portable coating thickness analyzer, COM-15068.

b) Measure the scratch depth using laser gauge sensor, COM-15067.

c) Subtract the coating thickness from the scratch depth measurement. Ensure the result is positive 0.001 in. (0.025 mm) or larger.

NOTE: The 0.001 in. (0.025 mm) or larger difference above accounts for instrument measuring errors to ensure a 0.0005 in. (0.0127 mm) maximum scratch depth into base material.

2) Damage to the base metal area exceeds 1 in^2 (645 mm^2).

(e) If the base metal is exposed by a scratch then the scratch will then be considered a gouge and be repaired as a crack.

(f) Measure the size of the area that has the cracks, and make a sketch of the location and shape of each area, and mark the dimensions on the sketch. Make sure you keep this data so it can be used for the next inspection.

(g) Repair the cracks on the chrome surface (TASK 32-00-10-300-801), if identified.

(h) If you repaired the chrome surface for cracks then you must do this inspection task again in four months or 400 cycles (whichever comes first), and then again until the shock strut is removed and replaced. Once chrome is damaged, there is no permanent repair, and the damage can continue to spread. The only permanent repair is to strip and replate the chrome. If a repair for minor scratches was preformed, it is not necessary to perform the repeat inspection provided that there are no shock strut fluid leaks and that the minor repair did not affect the base material.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR INNER CYLINDER CHROME - CLEANING/PAINTING

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure provides instruction to clean the dirt and grit from the chrome surfaces of the landing gear inner cylinders. Cleaning these chrome surfaces will make it easier to determine if any seals leak and it will also prolong the life of the seals.

C. This procedure is applicable to the nose landing gear and the main landing gear.

TASK 32-00-10-100-801

2. Landing Gear Inner Cylinder Chrome Cleaning - with Strut Extended

A. References

Reference	Title
07-11-01 P/B 201	JACK AIRPLANE - MAINTENANCE PRACTICES
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
12-15-31 P/B 301	MAIN LANDING GEAR SHOCK STRUT - SERVICING
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00070	Fluid - Hydraulic, Petroleum Base	MIL-PRF-5606 (Replaces MIL-H-5606)
D00106	Fluid - Hydraulic, Petroleum Base, For Preservation And Operation	MIL-PRF-6083 (NATO C-635)
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32 Type I

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. General

SUBTASK 32-00-10-940-001

(1) This task is used with the inspection and repair tasks for the inner cylinder chrome.

E. Prepare for the procedure

SUBTASK 32-00-10-490-003

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

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SUBTASK 32-00-10-582-001

(2) To clean as much of the chrome surface possible, do one of these steps:

(a) Clean the chrome before you fill the airplane with fuel.

(b) Over-inflate the shock strut with dry-air or nitrogen (TASK 12-15-31-610-802).

(c) Use airplane jacks to lift the airplane until the tires do not touch the ground (TASK 07-11-01-580-815).

F. Procedure

SUBTASK 32-00-10-100-003

CAUTION	DO NOT RUB THE SMEAR MARKS TO TRY TO REMOVE THEM. THIS COULD CAUSE DAMAGE TO THE WEAR SURFACE.

(1) On the shock strut inner cylinder chrome, you may find dark smear marks that have a small amount of texture and are difficult to remove. These smear marks are created by oxidation of the self lubricating material that is deposited on the chrome by the shock strut bearings. These smear marks are considered acceptable.

SUBTASK 32-00-10-100-001

(2) To clean the maximum exposed chrome surface of the inner cylinder, do this task before you fill the airplane with fuel.

(3) Clean the dirt, oil and other unwanted materials from the chrome surface of the inner cylinders with a clean cloth that is soaked in one of the these:

(a) fluid, D50022

(b) fluid, D00467

(c) fluid, D00070

(d) fluid, D00106.

G. Put the aircraft back to its usual condition.

SUBTASK 32-00-10-610-001

(1) Service the shock strut to the proper inflation (MAIN LANDING GEAR SHOCK STRUT - SERVICING, PAGEBLOCK 12-15-31/301).

SUBTASK 32-00-10-580-001

(2) Take the airplane off jacks (JACK AIRPLANE - MAINTENANCE PRACTICES, PAGEBLOCK 07-11-01/201).

——— **END OF TASK** ———

TASK 32-00-10-100-802

3. Landing Gear Inner Cylinder Chrome Cleaning

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

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B. Consumable Materials

Reference	Description	Specification
D00070	Fluid - Hydraulic, Petroleum Base	MIL-PRF-5606 (Replaces MIL-H-5606)
D00106	Fluid - Hydraulic, Petroleum Base, For Preservation And Operation	MIL-PRF-6083 (NATO C-635)
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32 Type I

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Cleaning

SUBTASK 32-00-10-420-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Procedure

SUBTASK 32-00-10-160-001

> **CAUTION** DO NOT RUB THE SMEAR MARKS TO TRY TO REMOVE THEM. THIS COULD CAUSE DAMAGE TO THE WEAR SURFACE.

(1) On the shock strut inner cylinder chrome, you may find dark smear marks that have a small amount of texture and are difficult to remove. These smear marks are created by oxidation of the self lubricating material that is deposited on the chrome by the shock strut bearings. These smear marks are considered acceptable.

SUBTASK 32-00-10-610-002

(2) Clean the dirt, oil and other unwanted materials from the chrome surface of the inner cylinder. Use a clean cloth that is soaked in one of these:

NOTE: To clean the maximum exposed chrome, do this task before you fill the airplane with fuel.

(a) fluid, D50022

(b) fluid, D00467

(c) fluid, D00070

(d) fluid, D00106.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR INNER CYLINDER CHROME - REPAIR

1. General

A. This procedure provides instructions to repair cracks and minor scratches to the chrome surface of the landing gear inner cylinder.

B. This procedure is applicable to the nose landing gear and the main landing gear.

TASK 32-00-10-300-801

2. Landing Gear Inner Cylinder Chrome Repair

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-00-10-100-801	Landing Gear Inner Cylinder Chrome Cleaning - with Strut Extended (P/B 701)
32-00-10-211-801	Landing Gear Inner Cylinder Chrome Inspection (P/B 601)

B. Consumable Materials

Reference	Description	Specification
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	AMS3819 Class 1 Grade A or B Form 1 (Supersede BMS15-5 CL A)
G01601	Abrasive - Aluminum Oxide Coated Cloth, 400 to 600 grit	
G50220	Pad - Abrasive, Scotch- Brite 7447	
G50338	Abrasive Paper - Aluminum Oxide, 800 Grit	

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the procedure

SUBTASK 32-00-10-490-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-10-615-001

(2) Make sure these tasks are accomplished before you do the repair:

(a) Landing Gear Inner Cylinder Chrome Cleaning - with Strut Extended, TASK 32-00-10-100-801.

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(b) Landing Gear Inner Cylinder Chrome Inspection, TASK 32-00-10-211-801.

E. Procedure

SUBTASK 32-00-10-350-001

> **CAUTION** DO NOT USE POWER TOOLS TO DO THIS TASK. YOU MUST USE HAND TOOLS. IF YOU USE POWER TOOLS, YOU CAN CAUSE MORE DAMAGE TO COMPONENTS.

(1) To repair cracks to the chrome surface, do these steps:

(a) Use 400 to 600 grit abrasive cloth, G01601, that is soaked in fluid, D00467, to hand blend the exposed base metal and remove any corrosion and sharp edges to the chrome.

NOTE: Ensure reworked edges can not be caught with the sharp point of the dental explorer.

(b) Use a cotton wiper, G00034 to apply a thick layer of primer, C00259 to the exposed base metal with adequate overlap on the chrome surface.

(c) Before the primer dries, remove the excess primer with a clean, dry cloth.

NOTE: Make sure no primer gets on the seals or scraper, as they can be damaged by the primer and may start to leak.

(d) Let the primer cure for at least 4 hours., then apply a second layer of primer and allow to dry an additional 4 hours.

(e) Use Scotch-Brite 7447 pad, G50220, that is soaked in fluid, D00467, to blend and smooth out the primer surface to achieve a similar contour as the chrome surface.

(f) Use abrasive paper, G50338, that is soaked in fluid, D00467, to polish the chrome surface.

SUBTASK 32-00-10-350-002

> **CAUTION** DO NOT USE POWER TOOLS TO DO THIS TASK. YOU MUST USE HAND TOOLS. IF YOU USE POWER TOOLS, YOU CAN CAUSE MORE DAMAGE TO COMPONENTS.

(2) To repair minor scratches to the chrome surface, do these steps:

(a) Use 400 to 600 grit abrasive cloth, G01601, that is soaked in fluid, D00467, to smooth out the chrome surface until you can not see evidence of a scratch.

(b) Use abrasive paper, G50338, that is soaked in fluid, D00467, to polish the chrome surface.

SUBTASK 32-00-10-615-003

(3) Do this task: Landing Gear Inner Cylinder Chrome Cleaning - with Strut Extended, TASK 32-00-10-100-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR RETRACT/STEERING ACTUATOR CHROME - CLEANING

1. General

A. This procedure has these task:

(1) Main Landing Gear Retract Actuator Chrome Cleaning.

(2) Nose Landing Gear Steering Actuator Chrome Surfaces Cleaning.

(3) Nose Landing Gear Retract Actuator Chrome Cleaning.

TASK 32-00-11-100-801

2. Main Landing Gear Retract Actuators Chrome Surfaces Cleaning

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
B00130	Alcohol - Isopropyl	TT-I-735

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Access Panels

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel

E. Prepare to Clean the Main Landing Gear Retract Actuators Chrome Surfaces

SUBTASK 32-00-11-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-11-010-001

(2) To gain access to the left or right wing, do this step:

Open these access panels:

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel

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F. Clean the Main Landing Gear Retract Actuators Chrome Surfaces

SUBTASK 32-00-11-100-001

(1) Clean the dirt, oil and other unwanted materials from the chrome cylinder surface of the main landing gear retract actuators with a clean cloth that is soaked in isopropyl alcohol, B00130.

NOTE: It is not necessary to retract the landing gear to expose more of the chrome surface.

SUBTASK 32-00-11-840-002

(2) Clean the dirt, oil and other unwanted materials from the main landing gear retract actuator exterior surfaces where the chrome piston rod passes through the end gland with a clean cloth that is soaked in isopropyl alcohol, B00130.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-00-11-410-001

(1) Close the applicable access panel, do this step:

Close these access panels:

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel

——— END OF TASK ———

TASK 32-00-11-100-802

3. Nose Landing Gear Steering Actuators Chrome Surfaces Cleaning

A. General

(1) There are two methods to clean the chrome surfaces of the steering actuators. Each method is optional to the other. The method that is used is determined by the ground equipment that is available.

(a) Method 1:

1) This method disconnects the apex joint of the torsion link.

(b) Method 2:

1) This method uses hydraulic system A to turn the nose wheel tires.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)

C. Consumable Materials

Reference	Description	Specification
B00130	Alcohol - Isopropyl	TT-I-735

D. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

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E. Prepare to Clean the Nose Landing Gear Steering Actuator Chrome Surfaces

SUBTASK 32-00-11-480-002

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-00-11-020-001

(2) For Method 1, do this task: Nose Landing Gear Torsion Link Disconnection, TASK 32-21-31-000-803.

SUBTASK 32-00-11-860-004

(3) For Method 1, push or pull on the upper torsion link to turn the steering collar until the chrome surface of the steering actuator to be cleaned is exposed.

SUBTASK 32-00-11-840-004

(4) For Method 2, do the following if you will use greased plates to turn the nose landing gear.

NOTE: The use of greased plates is optional for method 2.

(a) Put greased plates on the ground, such that the greased plates are close to the nose landing gear.

(b) Move the airplane until the nose landing gear tires are on the greased plates.

SUBTASK 32-00-11-860-005

(5) For Method 2, pressurize hydraulic system A: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801..

SUBTASK 32-00-11-820-001

(6) For Method 2, use the steering tiller to operate the steering system of the nose wheel full left and full right or until the chrome surface of the actuator to be cleaned is fully exposed.

NOTE: The steering system has a 1 - 2 degree dead band in the center position.

F. Clean the Nose Landing Gear Steering Actuators Chrome Surfaces

SUBTASK 32-00-11-100-002

(1) Clean the dirt, oil and other unwanted materials from the chrome cylinder surface of the steering actuator with a clean cloth that is soaked in isopropyl alcohol, B00130.

NOTE: Make sure that the chrome cylinder surface of the steering actuators are exposed when you do this step.

SUBTASK 32-00-11-100-003

(2) Clean the dirt, oil and other unwanted materials from the steering actuator exterior surfaces where the chrome piston rod passes through the end gland with a clean cloth that is soaked in isopropyl alcohol, B00130.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-00-11-420-001

(1) If you used Method 1, do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-00-11-840-005

(2) If you used Method 2, move the airplane away from the greased plates if they were used.

——— END OF TASK ———

TASK 32-00-11-100-803

4. Nose Landing Gear Retract Actuator Chrome Surfaces Cleaning

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
B00130	Alcohol - Isopropyl	TT-I-735

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare to Clean the Nose Landing Gear Retract Actuator Chrome Surfaces

SUBTASK 32-00-11-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Clean the Nose Landing Gear Retract Actuator Chrome Surfaces

SUBTASK 32-00-11-100-004

(1) Clean the dirt, oil and other unwanted materials from the chrome cylinder surface of the retract actuator of the nose landing gear with a clean cloth that is soaked in isopropyl alcohol, B00130.

NOTE: It is not necessary to retract the landing gear to expose more of the chrome surface.

(2) Clean the dirt, oil and other unwanted materials from the nose landing gear retract actuator exterior surfaces where the chrome piston rod passes through the end gland with a clean cloth that is soaked in isopropyl alcohol, B00130.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1. General

Table 201/32-00-37-993-802 specific Corrosion Problems - Landing Gear

AREA	PROBLEM	INDEX
Main Landing Gear	Corrosion because of environmental exposure.	32-11-37
	Damage to the side strut finish caused by interference with center door.	
	Corrosion on MLG torsion pins.	
	Stress corrosion cracks on H11 brake attachment bolts.	
Nose Landing Gear	Corrosion on torsion link pin and shaft.	32-21-37
	Corrosion found in steering collar area.	
	Corrosion on torsion link pin and shaft.	

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-05-03-210-801

1. INTERNAL - GENERAL VISUAL: LEFT MAIN LANDING GEAR ASSEMBLY

Figure 201

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

Zone	Area
734	Left Main Landing Gear

B. Access Panels

Number	Name/Location
551BB	Lower Inboard Fixed Trailing Edge, Gear Adjustment Door
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
551DT	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
551EB	Lower Inboard Fixed Trailing Edge, MLG Attach Fitting Access Panel
551ET	Upper Inboard Fixed Trailing Edge, Structural MLG Beam Access Panel
551FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel

C. Inspection

SUBTASK 32-05-03-010-001

(1) Open these access panels:

Number	Name/Location
551BB	Lower Inboard Fixed Trailing Edge, Gear Adjustment Door
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
551DT	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
551EB	Lower Inboard Fixed Trailing Edge, MLG Attach Fitting Access Panel
551ET	Upper Inboard Fixed Trailing Edge, Structural MLG Beam Access Panel
551FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel

SUBTASK 32-05-03-210-001

(2) Do a General Visual inspection of the left main landing gear assembly, including outer cylinder, inner cylinder, axle, torsion links, side strut, lock links and retraction linkage. Landing gear removal is required. Disassemble as required to accomplish CPCP basic task on all fittings, lugs, lug bores, bolts and pins. Normal overhaul procedures, applied with the landing gear removed, at intervals not exceeding 10 years are adequate to maintain corrosion at safe levels on main landing gear components. Therefore application of the basic tasks and reporting are not required on these components.

SUBTASK 32-05-03-910-001

(3) 737–6789 Basic Task Description, AMM Task 51–05–01–210–802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-05-03-410-001

(4) Close these access panels:

Number	Name/Location
551BB	Lower Inboard Fixed Trailing Edge, Gear Adjustment Door
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
551DT	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
551EB	Lower Inboard Fixed Trailing Edge, MLG Attach Fitting Access Panel
551ET	Upper Inboard Fixed Trailing Edge, Structural MLG Beam Access Panel
551FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2101132 S0000444920_V2

Left Main Landing Gear Assembly
Figure 201/32-05-03-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-05-03-210-802

2. INTERNAL - GENERAL VISUAL: RIGHT MAIN LANDING GEAR ASSEMBLY

Figure 202

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

Zone	Area
744	Right Main Landing Gear

B. Access Panels

Number	Name/Location
651BB	Lower Inboard Fixed Trailing Edge, Gear Door Adjustment
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DT	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
651EB	Lower Inboard Fixed Trailing Edge, MLG Attach Fitting Access Panel
651ET	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
651FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel

C. Inspection

SUBTASK 32-05-03-010-002

(1) Open these access panels:

Number	Name/Location
651BB	Lower Inboard Fixed Trailing Edge, Gear Door Adjustment
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DT	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
651EB	Lower Inboard Fixed Trailing Edge, MLG Attach Fitting Access Panel
651ET	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
651FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel

SUBTASK 32-05-03-210-002

(2)) Do a General Visual inspection of the right main landing gear assembly, including outer cylinder, inner cylinder, axle, torsion links, side strut, lock links and retraction linkage. Landing gear removal is required. Disassemble as required to accomplish CPCP basic task on all fittings, lugs, lug bores, bolts and pins. Normal overhaul procedures, applied with the landing gear removed, at intervals not exceeding 10 years, are adequate to maintain corrosion at safe levels on main landing gear components. Therefore application of the basic tasks and reporting are not required on these components.

SUBTASK 32-05-03-910-002

(3) 737–6789 Basic Task Description, AMM Task 51–05–01–210–802.

SUBTASK 32-05-03-410-002

(4) Close these access panels:

Number	Name/Location
651BB	Lower Inboard Fixed Trailing Edge, Gear Door Adjustment

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Number	Name/Location
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DT	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
651EB	Lower Inboard Fixed Trailing Edge, MLG Attach Fitting Access Panel
651ET	Upper Inboard Fixed Trailing Edge, MLG Beam Access Panel
651FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Right Main Landing Gear Assembly
Figure 202/32-05-03-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-05-03-210-803

3. INTERNAL - GENERAL VISUAL: NOSE LANDING GEAR ASSEMBLY

Figure 203

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Location Zones

Zone	Area
713	Nose Landing Gear

C. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AC	Fwd Nose Wheel Well Upper Access Panel
114AW	Forward Nose Wheel Well Panel
114BW	Forward Nose Wheel Well Panel
711AL	Forward Nose Wheel Door
712AR	Forward Nose Wheel Door

D. Inspection

SUBTASK 32-05-03-010-003

(1) Open these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AC	Fwd Nose Wheel Well Upper Access Panel
114AW	Forward Nose Wheel Well Panel
114BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

SUBTASK 32-05-03-010-005

(2) Open these access panels:

Number	Name/Location
711AL	Forward Nose Wheel Door
712AR	Forward Nose Wheel Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-05-03-210-003

(3) Do a General Visual inspection of the nose landing gear assembly, including outer cylinder, inner cylinder, drag strut, lock links, torsion links, and steering mechanism (plates and collar). Landing gear removal is required. Disassemble as required to accomplish CPCP basic task on all fittings, lugs, lug bores, bolts and pins. Normal overhaul procedures, applied with the landing gear removed, at intervals not exceeding 10 years, are adequate to maintain corrosion at safe levels on nose landing gear components. Therefore application of the basic tasks and reporting are not required on these components.

SUBTASK 32-05-03-910-003

(4) 737–6789 Basic Task Description, AMM Task 51–05–01–210–802.

SUBTASK 32-05-03-410-003

(5) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AC	Fwd Nose Wheel Well Upper Access Panel
114AW	Forward Nose Wheel Well Panel
114BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

SUBTASK 32-05-03-410-005

(6) Close these access panels:

Number	Name/Location
711AL	Forward Nose Wheel Door
712AR	Forward Nose Wheel Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Assembly
Figure 203/32-05-03-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Assembly
Figure 203/32-05-03-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1. General

A. This procedure has these tasks:

(1) Prepare to put the airplane in the air mode

(2) Put the airplane in the air mode

(3) Return the airplane to the ground mode

(4) Put the airplane systems back to their normal on ground condition.

TASK 32-09-00-840-801

2. Prepare to Put the Airplane in the Air Mode

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
78-31-00-040-802-F00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

B. Tools/Equipment

Reference	Description
STD-858	Tag - DO NOT OPERATE

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Prepare to Put the Airplane in the Air Mode

SUBTASK 32-09-00-860-027

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-00-480-002

> **WARNING** MAKE SURE THAT YOU INSTALL THE CHOCKS ON THE LANDING GEAR. WITHOUT THE CHOCKS, THE AIRPLANE COULD MOVE AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(2) Make sure that the chocks are installed at the wheels (PAGEBLOCK 10-11-05/201).

SUBTASK 32-09-00-040-015

(3) Make sure that the right stick shaker will not operate.

(a) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	6	C01393	STICK SHAKER RIGHT

SUBTASK 32-09-00-040-016

(4) Make sure that the weather radar will not operate.

(a) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450-999; LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483

SUBTASK 32-09-00-040-009

(5) Make sure that the Aircraft Communications Addressing And Reporting System (ACARS) will not operate UNLESS you are trying to check the Communications Management Unit (CMU) OUT, OFF, ON, IN (OOOI) status. In that case then skip this step.

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
LOM 402, 406, 432			
E	7	C00744	ACARS MU AC
LOM 407, 412, 415, 420, 422-425, 427-431, 433, 434, 437-447, 450-999; LOM 404 POST SB 737-23-1484			
E	8	C01483	CMU-1 AC
LOM 422, 425			
E	9	C01500	ACARS CMU DC
LOM 402, 406, 407, 412, 415, 420, 423, 424, 427, 428, 432-434, 437-447, 453-456, 458-464; LOM 404 POST SB 737-23-1484; LOM 457 POST SB 737-31-2184			
E	9	C01500	CMU/ACARS DC
LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450-999; LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483			

These circuit breakers are inoperative and should remain open:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483			

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483 (Continued)

(Continued)

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	8	C01483	CMU-1 AC (INOP)

LOM 429-431, 450-452, 465-999; LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483; LOM 457 PRE SB 737-31-2184

E	9	C01500	CMU/ACARS DC (INOP)

LOM ALL

SUBTASK 32-09-00-040-017

WARNING AVOID THE AUTOMATIC ACTIVATION OF THE PTU WHEN AIRPLANE IS IN AIR MODE, HYDRAULIC SYSTEM B EDP LOW PRESSURE, AND TRAILING EDGE FLAP NOT UP OR BETWEEN UP AND 15. AN UNINTENDED PRESSURIZATION OF HYDRAULIC SYSTEM B BY THE PTU CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) Make sure that the hydraulic power transfer unit will not operate.

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	15	C01081	HYDRAULIC SYSTEM PTU VALVE CONT 1
A	16	C01085	HYDRAULIC SYSTEM PTU VALVE CONT 2

SUBTASK 32-09-00-040-018

(7) Make sure that the take off warning horn will not operate.

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-09-00-040-019

(8) Make sure that the left stick shaker will not operate.

(a) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT

SUBTASK 32-09-00-040-020

(9) Make sure that the pitot probe, temperature probe, and Angle of Attack (AOA) vane heaters will not operate.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 406, 411, 412, 415, 416, 422-434, 437-447, 450-999; LOM 404, 407, 420 POST SB 737-30A1063

(a) Set the PROBE HEAT switches to the AUTO position.

NOTE: If the PROBE HEAT switches are set to the AUTO position, the air data heat system will only come on if an engine is started.

NOTE: If an engine is started or the PROBE HEAT switches are set to ON, it is necessary to open the circuit breakers.

1) Install a DO NOT OPERATE tag, STD-858, on the switches.

(b) Open these circuit breakers and install safety tags if an engine is started or the PROBE HEAT switches are set to ON.

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
C	4	C00236	HEATERS ELEV PITOT LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	4	C00237	HEATERS ELEV PITOT RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

LOM 404, 407, 420 PRE SB 737-30A1063

(c) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
C	4	C00236	HEATERS ELEV PITOT LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	4	C00237	HEATERS ELEV PITOT RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

LOM ALL

SUBTASK 32-09-00-040-034

(10) Make sure that the leading edge autoslat system will not operate.

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

SUBTASK 32-09-00-040-021

(11) Make sure that the drain masts do not get too hot:

NOTE: If you will put the airplane in the air mode for less than a minute, you do not need to de-activate the drain mast.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
E	4	C00700	HEATERS DRAIN MAST AIR

SUBTASK 32-09-00-040-005

(12) Make sure that the door area heaters will not operate.

(a) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
E	11	C01274	AIR CONDITIONING DOOR AREA HEAT CONT

SUBTASK 32-09-00-010-002

(13) To get access to the P91 and P92 panel, open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-09-00-040-022

(14) Make sure that the door area heaters will not operate.

WARNING

WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING

DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(a) Open these circuit breakers and install safety tags:

Power Distribution Panel Number 1, P91

Row	Col	Number	Name
LOM 402, 404, 406			
A	14	C01279	DOOR AREA HTR-AFT
A	16	C01280	DOOR AREA HTR-FWD
LOM 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999			
D	7	C01279	DOOR AREA HTR-AFT
D	9	C01280	DOOR AREA HTR-FWD

LOM ALL

SUBTASK 32-09-00-040-010

(15) Make sure that the standby hydraulic pump will not operate.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING

DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(a) Open this circuit breaker and install safety tag:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

SUBTASK 32-09-00-840-001

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU PUT THE AIRPLANE IN AIR MODE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(16) Make sure that persons and equipment are clear of flight control surfaces.

SUBTASK 32-09-00-840-005

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE RAM AIR INLET AND EXIT DOORS. THESE DOORS CAN MOVE SUDDENLY WHEN YOU PUT THE AIRPLANE INTO THE AIR MODE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(17) Make sure that persons and equipment are clear of the RAM inlet doors.

SUBTASK 32-09-00-040-002

WARNING

DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(18) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-802-F00.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-00-860-801

3. Put the Airplane in the Air Mode

(Figure 201, Figure 202)

A. General

(1) This task has three options to put the airplane in the air mode.

NOTE: Using the PSEU BITE procedure to simulate air mode is the recommended method. Using deactuators or jacking the airplane are the alternate methods. The use of deactuators or jacking the airplane will cause nuisance faults.

(a) You can put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU) (Recommended Method).

(b) You can also put deactuators on the nose and main landing gear to put the airplane in air mode (Alternate Method).

(c) You can also lift the airplane on jacks to put the airplane in air mode (Alternate Method).

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-146 Supplier: 81205

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Access Panels

Number	Name/Location
112A	Forward Access Door

F. Prepare for the Procedure

SUBTASK 32-09-00-860-001

WARNING OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Put the Airplane in the Air Mode With the PSEU BITE (Recommended Method)

NOTE: The PSEU software puts the air/ground relays in the mode opposite to the landing gear indicated states. For example, if the landing gear sensors indicate that the airplane is on the ground, the PSEU will only override to the "in air" condition.

SUBTASK 32-09-00-010-001

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-09-00-860-002

(2) Push the ON/OFF switch on the PSEU BITE panel to turn the PSEU BITE on.

SUBTASK 32-09-00-860-008

(3) Push the down arrow or NO switch until AIR/GND OVRD? is displayed.

SUBTASK 32-09-00-860-009

(4) Push the YES switch to select this option.

NOTE: The BITE display will show SET SYS1 IN AIR?. The PSEU is designed so that the air/ground system 1 and system 2 can be controlled independently. You will put both systems in the air mode unless a procedure specifies a system.

NOTE: Irregular operation of various systems may occur if SYS1 and SYS2 are placed in air and ground mode at the same time. If this occurs, disable the irregularly operating system.

NOTE: The amber PSEU light will come ON when either air/ground system is in override mode.

SUBTASK 32-09-00-860-012

(5) To change the state of systems 1 and 2, push the down arrow until SET 1 & 2 IN AIR? shows.

SUBTASK 32-09-00-860-017

(6) Push the YES switch.

SUBTASK 32-09-00-860-013

(7) The message ARE YOU SURE? will show. Push the YES switch again.

NOTE: The BITE display will show SYS 1 & 2 IN AIR.

NOTE: For 737-800 airplanes with Speed Brake Ground Proximity Sensor S1131 installed and all 737-900ER airplanes: After three (3) seconds SPEED BRK DO NOT ARM light will illuminate because the air/ground status of the S1131 switch disagrees with the airplane air/ground system for more than three (3) seconds. This switch provides air/ground information to support the logic for the short field flight spoiler supplemental travel system. The SPEED BRK DO NOT ARM light will remain illuminated until circuit breaker C1663 is cycled to clear the latched fault.

NOTE: For all 737-900ER airplanes: After twelve (12) seconds FEEL DIFF PRESS light will illuminate because the air/ground status of the S1131 switch disagrees with the airplane air/ground system. On -900ER airplanes only, the S1131 switch is used in the feel limiter function in the elevator feel computer. Disagreement between the air/ground status of this switch and the airplane air/ground system will result in a FEEL DIFF PRESS light, which will also trigger a Master Caution light. If the S1131 switch stays in ground mode, the lights will trigger twelve (12) seconds after takeoff and remain on. If the switch stays in flight mode, the lights will illuminate five (5) seconds after the plane lands and will remain on. This fault does not latch and will clear whenever the S1131 switch status agrees with the airplane air/ground system.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-00-860-014

(8) The SYS 1 IN AIR and SYS 2 IN AIR lights will come on.

H. Put the Airplane in the Air Mode With Deactuators (Alternate Method)

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 32-09-00-860-023

(1) Open and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	5	C01663	SPOILER PCU SOV SYS B

LOM ALL

SUBTASK 32-09-00-860-003

NOTE: This is not the recommended method to simulate air mode. This method will induce nuisance faults.

(2) Attach deactuators to the face of the air/ground sensors for the nose and main landing gear.

NOTE: You will need A27092-62 deactuators to put the airplane in the air mode. The proximity sensor test set, SPL-1690, contains one deactuator.

NOTE: As an option, deactuators can be constructed as follows: Material: 5052, 6061, 7075, or 2024 aluminum or sheet copper. For rectangular sensors - 1.5 in. (38 mm) x 0.75 in. (19 mm) x0.05 in. (1.27 mm). For round sensors - 1.0 in. (25 mm) x 1.0 in. (25 mm) x 0.05 in. (1.27 mm)

SUBTASK 32-09-00-860-015

(3) The SYS 1 IN AIR and SYS 2 IN AIR lights on the PSEU BITE panel will come on.

I. Put the Airplane in the Air Mode by Lifting the Airplane on Jacks (Alternate Method)

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 32-09-00-860-024

(1) Open and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	5	C01663	SPOILER PCU SOV SYS B

LOM ALL

SUBTASK 32-09-00-860-004

NOTE: This is not the recommended method to simulate air mode. This method will induce nuisance faults.

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-09-00-860-016

(3) The SYS 1 IN AIR and SYS 2 IN AIR lights on the PSEU BITE panel will come on.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G33333 S0006574704_V2

Air Mode Simulation with the PSEU BITE
Figure 201/32-09-00-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G29728 S0006574705_V2

Air Mode Simulation with Deactuators
Figure 202/32-09-00-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS OPPOSITE)

G29735 S0006574706_V2

Air Mode Simulation with Deactuators
Figure 202/32-09-00-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-00-860-802

4. Return the Airplane to the Ground Mode

(Figure 201)

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare to put the Airplane in Ground Mode

SUBTASK 32-09-00-840-006

WARNING KEEP PERSONS AND EQUIPMENT CLEAR OF THE RAM AIR INLET AND EXIT DOORS. THESE DOORS CAN MOVE SUDDENLY WHEN YOU PUT THE AIRPLANE INTO THE AIR MODE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure persons and equipment are clear of the RAM inlet doors.

E. Put the Airplane in Ground Mode

SUBTASK 32-09-00-860-005

(1) If the airplane was put in the air mode with the PSEU BITE, then do these steps:

(a) If the PSEU BITE display is off, then do these steps:

1) Push the ON/OFF switch on the PSEU BITE panel to turn the PSEU BITE display on.

2) Push the down arrow until AIR/GND OVRD? shows on the PSEU display.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3) Push the YES switch to select this option.

NOTE: The BITE display will show SET SYS 1 (2, or 1 & 2) IN AIR?

NOTE: The amber PSEU light comes on when either air/ground system is in override mode.

NOTE: For 737-800 airplanes with Speed Brake Ground Proximity Sensor S1131 installed and all 737-900ER airplanes: After three (3) seconds SPEED BRK DO NOT ARM light will illuminate because the air/ground status of the S1131 switch disagrees with the airplane air/ground system for more than three (3) seconds. This switch provides air/ground information to support the logic for the short field flight spoiler supplemental travel system. The SPEED BRK DO NOT ARM light will remain illuminated until circuit breaker C1663 is cycled to clear the latched fault.

NOTE: For all 737-900ER airplanes: After twelve (12) seconds FEEL DIFF PRESS light will illuminate because the air/ground status of the S1131 switch disagrees with the airplane air/ground system. On -900ER airplanes only, the S1131 switch is used in the feel limiter function in the elevator feel computer. Disagreement between the air/ground status of this switch and the airplane air/ground system will result in a FEEL DIFF PRESS light, which will also trigger a Master Caution light. If the S1131 switch stays in ground mode, the lights will trigger twelve (12) seconds after takeoff and remain on. If the switch stays in flight mode, the lights will illuminate five (5) seconds after the plane lands and will remain on. This fault does not latch and will clear whenever the S1131 switch status agrees with the airplane air/ground system.

(b) Push the down arrow until RESET OVRD? shows.

(c) Push the YES switch to select this option.

NOTE: The BITE display will show ARE YOU SURE?.

(d) Push the YES switch.

NOTE: The BITE display will show OVRD RESET. After a two second delay the BITE display will show AIR/GND OVRD?.

(e) The SYS 1 IN AIR and SYS 2 IN AIR lights will go off.

(f) Close this access panel:

Number	Name/Location
112A	Forward Access Door

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 32-09-00-860-025

(2) Open and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	5	C01663	SPOILER PCU SOV SYS B

LOM ALL

SUBTASK 32-09-00-860-006

(3) If the airplane was put in the air mode with deactuators, remove the deactuators from the nose and main landing gear.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-00-860-007

(4) If the airplane was put in the air mode by jacking the airplane, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-09-00-840-003

(5) Put the airplane systems back to their usual on-ground condition. To do this, do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

SUBTASK 32-09-00-860-022

(6) If the APU was the only source of AC power, when the airplane was in the air mode, do these steps.

NOTE: Configuration load shed occurs when the airplane is in the air mode, and the APU is the only source of AC power. The BPCU opens all galley load shed relays and removes power to the galley buses.

(a) AIRPLANES WITH GALLEY SWITCH:

1) Move the galley switch to the OFF and back to the ON position to reset the galley relays.

(b) AIRPLANES WITH CAB/UTL SWITCH:

1) Move the cabin utility switch to OFF and back to the ON position to reset the galley relays.

SUBTASK 32-09-00-860-018

(7) If you used the deactuator or jacked the airplane to simulate air mode do these steps to reset the PSEU:

NOTE: When you simulate air mode using the deactuators or by jacking the airplane, you will induce nuisance faults.

(a) Push the ON/OFF switch on the PSEU BITE panel to turn the PSEU BITE display on.

(b) Push YES switch to the following prompt: EXISTING FAULTS?

(c) Push the up arrow key until RESET LATCHES? shows on the PSEU display.

(d) Push the YES switch to select this option.

(e) Push YES switch to the following prompt: ARE YOU SURE?

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 32-09-00-860-026

(8) If you used the deactuator or jacked the airplane to simulate air mode, do these steps to reset the SPEEDBRAKE DO NOT ARM light if it is illuminated:

NOTE: When you simulate air mode using the deactuators or by jacking the airplane, you may cause SPEEDBRAKE DO NOT ARM light to be set and remain illuminated.

(a) Open and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	5	C01663	SPOILER PCU SOV SYS B

LOM ALL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-00-840-802

5. Return the Airplane Systems Back to Their Normal On Ground Condition

A. References

Reference	Title
78-31-00-440-803-F00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Return the Airplane Systems Back to Their Normal On Ground Condition

SUBTASK 32-09-00-440-008

(1) Return the right stick shaker to its original condition.

(a) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	6	C01393	STICK SHAKER RIGHT

SUBTASK 32-09-00-040-023

(2) Return the weather radar to its original condition.

(a) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450-999; LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483

SUBTASK 32-09-00-860-019

I (3) Return the Aircraft Communications Addressing And Reporting System (ACARS) to its original condition.

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
LOM 402, 406, 432			
E	7	C00744	ACARS MU AC

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LOM 402, 406, 432 (Continued)

(Continued)

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
LOM 407, 412, 415, 420, 422-425, 427-431, 433, 434, 437-447, 450-999; LOM 404 POST SB 737-23-1484			
E	8	C01483	CMU-1 AC
LOM 422, 425			
E	9	C01500	ACARS CMU DC
LOM 402, 406, 407, 412, 415, 420, 423, 424, 427, 428, 432-434, 437-447, 453-456, 458-464; LOM 404 POST SB 737-23-1484; LOM 457 POST SB 737-31-2184			
E	9	C01500	CMU/ACARS DC
LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450-999; LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483			

These circuit breakers are inoperative and should remain open:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483			
E	8	C01483	CMU-1 AC (INOP)
LOM 429-431, 450-452, 465-999; LOM 404 POST SB 737-23-1484 OR POST SB 737-23-1483; LOM 457 PRE SB 737-31-2184			
E	9	C01500	CMU/ACARS DC (INOP)

LOM ALL

SUBTASK 32-09-00-040-024

(4) Return the hydraulic power transfer unit to its original condition.

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	15	C01081	HYDRAULIC SYSTEM PTU VALVE CONT 1
A	16	C01085	HYDRAULIC SYSTEM PTU VALVE CONT 2

SUBTASK 32-09-00-040-025

(5) Return the take off warning system to its original condition.

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-09-00-040-026

(6) Return the left stick shaker to its original condition.

(a) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT

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SUBTASK 32-09-00-040-027

(7) Return the pitot probe, temperature probe, and Angle of Attack (AOA) vane heaters to their original condition.

LOM 402, 406, 411, 412, 415, 416, 422-434, 437-447, 450-999; LOM 404, 407, 420 POST SB 737-30A1063

(a) If necessary, remove the DO NOT OPERATE tag from the PROBE HEAT switches.

(b) If necessary, remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
C	4	C00236	HEATERS ELEV PITOT LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	4	C00237	HEATERS ELEV PITOT RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

LOM 404, 407, 420 PRE SB 737-30A1063

(c) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
C	4	C00236	HEATERS ELEV PITOT LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	4	C00237	HEATERS ELEV PITOT RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

LOM ALL

SUBTASK 32-09-00-840-007

(8) Return the leading edge autoslat system to its original condition.

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

SUBTASK 32-09-00-040-028

(9) Return the drain mast heat to the normal condition.

(a) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
E	4	C00700	HEATERS DRAIN MAST AIR

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SUBTASK 32-09-00-040-007

(10) Return the door area heaters to their original condition.

(a) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
E	11	C01274	AIR CONDITIONING DOOR AREA HEAT CONT

SUBTASK 32-09-00-040-029

(11) Return the door area heaters to their original condition.

WARNING WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(a) Remove the safety tags and close these circuit breakers:

Power Distribution Panel Number 1, P91

Row	Col	Number	Name
LOM 402, 404, 406			
A	14	C01279	DOOR AREA HTR-AFT
A	16	C01280	DOOR AREA HTR-FWD
LOM 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999			
D	7	C01279	DOOR AREA HTR-AFT
D	9	C01280	DOOR AREA HTR-FWD

LOM ALL

SUBTASK 32-09-00-840-004

(12) Return the standby hydraulic pump to the normal condition.

WARNING WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

WARNING	DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(a) Remove the safety tag and close this circuit breaker:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

SUBTASK 32-09-00-410-001

(13) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 32-09-00-440-006

(14) Cycle the circuit breaker to unlatch relay R00969 and extinguish the SPEEDBRAKE DO NOT ARM light.

(a) Open and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	5	C01663	SPOILER PCU SOV SYS B

SUBTASK 32-09-00-440-009

(15) If the SPEEDBRAKE DO NOT ARM light, on the P1-3 panel, illuminated during the task to put the airplane into the air mode, do one of the following steps to extinguish the light:

(a) Open and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	5	C01663	SPOILER PCU SOV SYS B

(b) Remove and supply electrical power to the aircraft.

NOTE: Cycling power to the entire aircraft is an alternate way to extinguish the SPEEDBRAKE DO NOT ARM light.

LOM ALL

SUBTASK 32-09-00-440-001

(16) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-803-F00.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR AIR/GROUND SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the main landing gear air/ground sensor

(2) An installation of the main landing gear air/ground sensor.

B. The procedures for the left and right installations are similar.

TASK 32-09-01-020-801

2. Main Landing Gear Air/Ground Sensor Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)

B. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

C. Prepare for the Removal

SUBTASK 32-09-01-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-01-840-003

> **WARNING** OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-09-01-860-001

(3) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Main Landing Gear Air/Ground Sensor Removal

SUBTASK 32-09-01-210-001

(1) Inspect the sensor [4] and target assembly for damage or other evidence that the sensor clearance may be out of tolerance.

(a) Write a note to check the sensor clearance if there is evidence that the sensor clearance may be out of tolerance.

SUBTASK 32-09-01-020-001

(2) Disconnect the sensor wires in the junction box.

(a) Remove and discard the lockwires [9] from the screws [7].

(b) Remove the screws [7] and washers [5] securing the junction box cover [6].

(c) Remove the junction box cover [6].

(d) Remove the sensor wire contacts from the terminal block in the junction box.

(e) Attach a string to the sensor wires.

NOTE: This string will be used to pull the wires of the new sensor through the conduit. The string can be tied to the landing gear structure to ensure that the string is not pulled through the conduit.

SUBTASK 32-09-01-020-002

(3) Remove the sensor [4].

(a) Remove the nuts [1], washers [2], and bolts [3] which secure the sensor [4] to the mounting bracket.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(b) Remove the nuts [1], washers [2], washers [8], and bolts [3] which secure the sensor [4] to the mounting bracket.

LOM ALL

(c) Remove the sensor [4] from the bracket.

(d) Pull the sensor wires out of the conduit.

1) Make sure that you do not pull the string through the conduit.

(e) Remove the string from the sensor wires.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS OPPOSITE)

1

ITEM	SENSOR NO.	MLG	LOCATION
[4]	S1010	R	OUTBD
[4]	S1011	R	INBD
[4]	S1012	L	OUTBD
[4]	S1013	L	INBD

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Main Landing Gear Air/Ground Sensor Installation
Figure 401/32-09-01-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS OPPOSITE)

1

ITEM	SENSOR NO.	MLG	LOCATION
[4]	S1010	R	OUTBD
[4]	S1011	R	INBD
[4]	S1012	L	OUTBD
[4]	S1013	L	INBD

1921675 S0000356387_V4

Main Landing Gear Air/Ground Sensor Installation
Figure 401/32-09-01-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

OUTBOARD JUNCTION BOX
(INBOARD JUNCTION BOX IS EQUIVALENT)
(EXAMPLE)

B

F78426 S0006574713_V3

Main Landing Gear Air/Ground Sensor Installation
Figure 401/32-09-01-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-01-400-801

3. Main Landing Gear Air/Ground Sensor Installation

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-01-400-802	Main Landing Gear Air/Ground Sensor Clearance Measurement (P/B 501)
32-09-01-710-801	Main Landing Gear Air/Ground Sensor Operational Test (P/B 501)

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Sensor	32-09-01-01-030	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-09-01-01-032	LOM 422-434, 437-447, 450-999

D. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

E. Prepare for the Installation

SUBTASK 32-09-01-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-01-840-004

> **WARNING** OBEY THE PROCEDURE THAT PREPARES TO PUT THE AIRPLANE IN THE AIR MODE. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) If the airplane systems are not prepared for air mode simulation, do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-09-01-860-002

(3) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

F. Main Landing Gear Air/Ground Sensor Installation

SUBTASK 32-09-01-350-001

(1) Cut the sensor wires to the correct length:

(a) You can use the sensor that was removed to determine the wire length on the replacement sensor.

SUBTASK 32-09-01-420-001

(2) Attach the contacts to the sensor wires.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

SUBTASK 32-09-01-410-004

(3) Fay seal the bottom of the sensor [4] with sealant, A00247.

LOM ALL

SUBTASK 32-09-01-420-002

(4) Attach the sensor [4] to the mounting bracket.

(a) Position the sensor [4] on the bracket.

LOM ALL; AIRPLANES WITH STEEL SENSORS

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237 or corrosion inhibiting material, G50136 (alternate) to the thread reliefs and threads of the bolts [3] and the nuts [1] and the faces of the washers [2]. Wipe off the excess.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(c) Apply a thin coat of Cor-Ban 27L Compound, G50237 or corrosion inhibiting material, G50136 (alternate) to the thread reliefs and threads of the bolts [3] and the nuts [1] and the faces of the washers [2] and the faces of the washers [8]. Wipe off the excess.

LOM ALL; AIRPLANES WITH STEEL SENSORS

(d) Install the bolts [3], washers [2], and nuts [1].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(e) Install the bolts [3], washers [2], washers [8], and nuts [1].

NOTE: Use CRES washers below bolt heads with titanium sensors. Use cad-plated washers below nuts. CRES washers are optional below bolt heads with stainless steel sensors.

LOM ALL

SUBTASK 32-09-01-410-001

(5) Attach the sensor wires to the airplane.

(a) Attach the string to the sensor wires.

(b) Pull the wires through the conduit to the junction box.

(c) Remove the string from the sensor wires

(d) Install the sensor contacts into the terminal block.

1) Red wire goes into position A.

2) Yellow wire goes into position E.

3) Blue wire goes into position C.

SUBTASK 32-09-01-410-002

(6) Install the junction box cover [6].

(a) Make sure that the junction box cover [6] is in satisfactory condition.

1) If necessary, replace the junction box cover [6].

(b) Install the washers [5] and screws [7] to attach the junction box cover [6].

(c) Install the lockwires [9] (MS20995C32 lockwires, G01048) between the screws [7].

G. Main Landing Gear Air/Ground Sensor Test

SUBTASK 32-09-01-200-001

(1) Do a post installation check of the sensor [4]:

(a) Do this task: Main Landing Gear Air/Ground Sensor Clearance Measurement, TASK 32-09-01-400-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

(c) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

(d) Do this task: Main Landing Gear Air/Ground Sensor Operational Test, TASK 32-09-01-710-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR AIR/GROUND SENSOR - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) Measurement of the main landing gear air/ground sensor clearance

(2) Adjustment of the main landing gear air/ground sensor clearance

(3) Operational test of the main landing gear air/ground sensor

B. The procedures for the left and right adjustment/tests are similar.

TASK 32-09-01-400-802

2. Main Landing Gear Air/Ground Sensor Clearance Measurement

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

C. Prepare for the Procedure

SUBTASK 32-09-01-480-005

(1) Make sure that the chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-09-01-480-006

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

D. Measure the Main Landing Gear Air/Ground Sensor Clearance

SUBTASK 32-09-01-220-001

(1) Measure the clearance between the sensor and target [1] with a feeler gage.

SUBTASK 32-09-01-820-001

(2) If the sensor clearance is outside the tolerance shown in Figure 501, then adjust the sensor clearance. To adjust the clearance, (Main Landing Gear Air/Ground Sensor Clearance Adjustment, TASK 32-09-01-820-801).

NOTE: Write down the measured clearance so you will know what adjustments must be made.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS OPPOSITE)

1

SENSOR NO.	MLG	LOCATION
S1010	R	OUTBD
S1011	R	INBD
S1012	L	OUTBD
S1013	L	INBD

2 PHYSICAL GAP TOLERANCE
3 PSEU TOLERANCE

F84018 S0006574717_V6

Main Landing Gear Air/Ground Sensor Test
Figure 501/32-09-01-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU)

G25352 S0006574718_V2

Main Landing Gear Air/Ground Sensor Test
Figure 501/32-09-01-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-01-820-801

3. Main Landing Gear Air/Ground Sensor Clearance Adjustment

(Figure 501)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

D. Prepare for the Main Landing Gear Air/Ground Sensor Clearance Adjustment

SUBTASK 32-09-01-480-007

(1) Make sure that chocks are installed at the wheels (TASK 10-11-05-500-801, TASK 10-11-05-500-802).

SUBTASK 32-09-01-480-011

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Main Landing Gear Air/Ground Sensor Clearance Adjustment

SUBTASK 32-09-01-020-009

(1) Use the target bracket to adjust the sensor clearance.

(a) Loosen the attaching hardware on the target bracket.

(b) Adjust the bracket to get the correct clearance (Figure 501).

(c) If you can adjust the bracket to get the correct clearance, do the steps to re-tighten the bracket fasteners.

(d) If you cannot adjust the bracket to get the correct clearance, continue the adjustment procedure.

(e) Re-tighten the bracket fasteners, do these steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

1) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs and threads of the nuts and the faces of the washers that secure the target bracket.
   a) Wipe off the excess.
2) Tighten the target bracket fasteners.

SUBTASK 32-09-01-020-007

(2) Remove the main landing gear air/ground sensor, do these steps:
   (a) Remove the attaching hardware from the sensor.
   (b) Move the sensor out of the way.

SUBTASK 32-09-01-020-003

(3) Remove the target and shims, do these steps:
   (a) Remove the screws [3], washers [4], and nuts [5].
   (b) Remove the target [1] and shims [2].

SUBTASK 32-09-01-110-001

(4) Clean the shims and mounting surfaces.

SUBTASK 32-09-01-420-004

(5) Remove or add shims [2] as required to get the necessary clearance.

SUBTASK 32-09-01-420-005

(6) Secure the shim stack and target [1], do these steps:
   (a) Position the shims [2] and target [1] on the mounting bracket.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

   (b) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs and threads of the washers [4], bolts [6] and the faces of the screws [3].
      1) Wipe off the excess.

LOM ALL

   (c) Replace the hardware holding the shim stack and target [1].

SUBTASK 32-09-01-020-008

(7) Re-install the main landing gear air/ground sensor, do these steps:
   (a) Position the sensor on the link assembly.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces of the attaching hardware.

1) Wipe off the excess.

(c) Secure the sensor with the attaching hardware.

SUBTASK 32-09-01-220-002

(8) Measure the sensor clearance (TASK 32-09-01-400-802).

(a) If the sensor clearance is not correct, adjust the sensor clearance again.

SUBTASK 32-09-01-390-002

(9) Seal the shim stack, do these steps:

(a) Clean the shims [2].

(b) Apply sealant, A00247, to the shim surfaces.

SUBTASK 32-09-01-390-003

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(10) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the nut [5].

END OF TASK

TASK 32-09-01-710-801

4. Main Landing Gear Air/Ground Sensor Operational Test

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

C. Access Panels

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for the Procedure

SUBTASK 32-09-01-480-009

(1) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-09-01-480-010

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(2) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Procedure

SUBTASK 32-09-01-010-002

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-09-01-740-001

(2) Use the PSEU BITE to test the sensor.

(a) Push the ON/OFF switch on the PSEU BITE display.

(b) Push the down arrow until OTHER FUNCTNS? shows.

(c) Push the YES switch to select OTHER FUNCTNS?

(d) Push the down arrow until SENSOR RIGGING? shows.

(e) Push the YES switch to select SENSOR RIGGING?

(f) Push the down arrow until the applicable sensor identification shows.

NOTE: See the table in (Figure 501) for the sensor identification and location.

(g) Push the YES switch to select the sensor.

(h) Push the YES switch to select GAP GRAPH? The sensor number and gap display meter will show.

NOTE: You can also display the gap value in MILS (1 MIL equals 1/1000th of an inch) or required changes to the sensor gap. Push on the down arrow or NO switch to show these options.

(i) Make sure the PSEU display shows the sensor clearance within tolerance.

NOTE: For a description of the sensor clearance display see (Figure 501).

F. Return the airplane to its normal configuration

SUBTASK 32-09-01-840-001

(1) Push the ON/OFF switch on the PSEU BITE display to turn the BITE display off.

(a) Push the YES switch to confirm that you want to turn off the display.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-01-840-002

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR AIR/GROUND SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the nose landing gear air/ground sensor

(2) Installation of the nose landing gear air/ground sensor

B. The procedures for the left and right installations are similar.

TASK 32-09-02-000-801

2. Nose Landing Gear Air/Ground Sensor Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)

B. Location Zones

Zone	Area
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-09-02-480-010

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-02-840-002

> **WARNING** OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-09-02-860-001

(3) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Nose Landing Gear Air/Ground Sensor Removal

SUBTASK 32-09-02-210-001

(1) Inspect the sensor [1] and target assembly for damage or other evidence that the sensor clearance may be out of tolerance.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Write a note to check the sensor clearance if there is evidence that the sensor clearance may be out of tolerance.

SUBTASK 32-09-02-020-003

(2) Disconnect the sensor wires in the junction box.

(a) Remove the screws [5] and washers [6] that secure the junction box cover [7].

(b) Remove the junction box cover [7].

(c) Remove the sensor wire contacts from the terminal block in the junction box.

(d) Attach a string to the sensor wires.

NOTE: This string will be used to pull the wires of the new sensor through the conduit. The string can be attached to the landing gear structure to ensure that the string is not pulled through the conduit.

SUBTASK 32-09-02-020-004

(3) Remove the sensor [1].

LOM ALL; AIRPLANES WITH STEEL SENSORS

(a) Remove the nuts [2], washers [3], and bolts [4] that secure the sensor [1] to the mounting bracket.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(b) Remove the nuts [2], washers [3], washers [8], and bolts [4] that secure the sensor [1] to the mounting bracket.

LOM ALL

(c) Remove the sensor [1] from the bracket.

(d) Pull the sensor wires out of the conduit.

1) Make sure not to pull the string through the conduit.

(e) Remove the string from the sensor wires.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**(LEFT SENSOR IS SHOWN,
RIGHT SENSOR IS OPPOSITE)
(EXAMPLE)**

A

1 DIRECTION OF THE FASTENERS CAN BE DIFFERENT. ACTUAL DIRECTION FOR EACH AIRPLANE CAN BE CHECKED IN THE AIRCRAFT ILLUSTRATED PARTS CATALOGUE (AIPC).

3024486 S0000796213_V1

**Nose Landing Gear Air/Ground Sensor Installation
Figure 401/32-09-02-990-802 (Sheet 1 of 3)**

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**(LEFT SENSOR IS SHOWN,
RIGHT SENSOR IS OPPOSITE)
(EXAMPLE)**

A

3024487 S0000796214_V1

**Nose Landing Gear Air/Ground Sensor Installation
Figure 401/32-09-02-990-802 (Sheet 2 of 3)**

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL

F77807 S0006574725_V3

Nose Landing Gear Air/Ground Sensor Installation
Figure 401/32-09-02-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-02-400-802

3. Nose Landing Gear Air/Ground Sensor Installation

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-02-220-801	Nose Landing Gear Air/Ground Sensor Clearance Measurement (P/B 501)
32-09-02-710-801	Nose Landing Gear Air/Ground Sensor Operational Test (P/B 501)
WDM 32-31-11	WIRING DIAGRAM MANUAL

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Sensor	32-09-02-01-052	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-09-02-01-053	LOM 422-434, 437-447, 450-999

D. Location Zones

Zone	Area
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Prepare for the Installation

SUBTASK 32-09-02-480-009

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear.

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-02-840-003

> **WARNING** OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) If the airplanes systems are not prepared for air mode simulation, do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-09-02-860-002

(3) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

F. Nose Landing Gear Air/Ground Sensor Installation

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

SUBTASK 32-09-02-410-004

(1) Fay seal the bottom of the sensor [1] with sealant, A00247.

LOM ALL

SUBTASK 32-09-02-420-004

(2) Attach the sensor [1] to the mounting bracket:

(a) Position the sensor [1] on the bracket.

LOM ALL; AIRPLANES WITH STEEL SENSORS

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to the thread reliefs and threads of the bolts [4], nuts [2], and the faces of the washers [3].

1) Wipe off the excess of the material.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(c) Apply a thin coat of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to the thread reliefs and threads of the bolts [4] and nuts [2] and the faces of the washers [3] and washers [8].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH TITANIUM SENSORS (Continued)

1) Wipe off the excess of the material.

LOM ALL; AIRPLANES WITH STEEL SENSORS

(d) Install the bolts [4], washers [3], and nuts [2] to secure the sensor [1].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(e) Install the bolts [4], washers [3], washers [8], and nuts [2] to secure the sensor [1].

NOTE: Use CRES (Corrosion Resistant Steel) washers below bolt heads with titanium sensors. Use cad-plated washers below nuts. CRES washers are optional below bolt heads with stainless steel sensors.

LOM ALL

SUBTASK 32-09-02-350-002

(3) Do these steps to pull the sensor wires through the conduit:

(a) Attach the string to the sensor wires.

(b) Pull the wires through the conduit to the junction box.

(c) Remove the string from the sensor wires.

SUBTASK 32-09-02-420-005

(4) Attach the contacts to the sensor wires.

SUBTASK 32-09-02-410-001

(5) Attach the sensor wires to the airplane:

(a) Install the sensor contacts into the terminal block (WDM 32-31-11).

1) Red wire goes into position A.

NOTE: The red wire can be connected to position A or B.

2) Yellow wire goes into position E.

NOTE: The yellow wire can be connected to position E or F.

3) Blue wire goes into position C.

NOTE: The blue wire can be connected to position C or D.

SUBTASK 32-09-02-410-002

(6) Install the junction box cover [7].

(a) Install the washers [6] and screws [5] to secure the junction box cover [7].

G. Nose Landing Gear Air/Ground Sensor Installation Test

SUBTASK 32-09-02-200-001

(1) Do a post installation check of the sensor [1]:

(a) Do this task: Nose Landing Gear Air/Ground Sensor Clearance Measurement, TASK 32-09-02-220-801.

(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

(d) Do this task: Nose Landing Gear Air/Ground Sensor Operational Test, TASK 32-09-02-710-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR AIR/GROUND SENSOR - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) Measure the nose landing gear air/ground sensor clearance

(2) Adjust the nose landing gear air/ground sensor clearance

(3) Operational test of the nose landing gear air/ground sensor.

B. The procedures for the left and right adjustment/tests are similar.

TASK 32-09-02-220-801

2. Nose Landing Gear Air/Ground Sensor Clearance Measurement

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
713	Nose Landing Gear

C. Prepare for the Procedure

SUBTASK 32-09-02-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-02-480-002

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Measure the Nose Landing Gear Air/Ground Sensor Clearance

SUBTASK 32-09-02-220-001

(1) Measure the clearance between the sensor and target [1] with a feeler gage.

SUBTASK 32-09-02-820-001

(2) If the sensor clearance is outside the tolerance shown in Figure 501, do this task: Nose Landing Gear Air/Ground Sensor Clearance Adjustment, TASK 32-09-02-400-801.

NOTE: Write down the measured clearance so you will know what adjustments must be made.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S1014	L
2	S1015	R

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

4 DIRECTION OF THE FASTENERS CAN BE DIFFERENT. ACTUAL DIRECTION FOR EACH AIRPLANE CAN BE CHECKED IN THE AIRCRAFT ILLUSTRATED PARTS CATALOGUE (AIPC).

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Nose Landing Gear Air/Ground Sensor Test
Figure 501/32-09-02-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU)

G02628 S0006574730_V2

Nose Landing Gear Air/Ground Sensor Test
Figure 501/32-09-02-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-02-400-801

3. Nose Landing Gear Air/Ground Sensor Clearance Adjustment

(Figure 501)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Location Zones

Zone	Area
713	Nose Landing Gear

D. Prepare for the Adjustment

SUBTASK 32-09-02-480-003

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear.

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-02-480-004

(2) Make sure that chocks are installed at the wheels.

(a) If the chocks are not installed, do this task: Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801 or Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802.

E. The Nose Landing Gear Air/Ground Sensor Clearance Adjustment

SUBTASK 32-09-02-020-001

(1) Remove the lockwire [3], bolts [4], and washers [5].

SUBTASK 32-09-02-020-002

(2) Remove the target [1] and shims [2].

SUBTASK 32-09-02-110-001

(3) Clean the shims [2] and mounting surfaces.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-02-820-002

(4) Remove or add shims [2] as required to get the necessary clearance.

SUBTASK 32-09-02-620-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(5) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads of the bolts [4], and faces of the washers [5].

(a) Wipe off the excess.

SUBTASK 32-09-02-420-001

(6) Assemble the target [1] assembly.

(a) Position the shims [2] and target [1] on the mounting bracket.

(b) Install the bolts [4] and washers [5].

SUBTASK 32-09-02-220-002

(7) Do this task: Nose Landing Gear Air/Ground Sensor Clearance Measurement, TASK 32-09-02-220-801.

(a) If the sensor clearance is not correct, adjust the sensor clearance again.

SUBTASK 32-09-02-390-001

(8) Seal the shim stack.

(a) Clean the shims [2].

(b) Apply sealant, A00247, to the shim surfaces.

SUBTASK 32-09-02-620-002

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(9) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the lockwire [3].

SUBTASK 32-09-02-420-002

(10) Install the lockwire [3] on the bolts [4].

END OF TASK

TASK 32-09-02-710-801

4. Nose Landing Gear Air/Ground Sensor Operational Test

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Procedure

SUBTASK 32-09-02-480-005

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-02-480-006

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

E. Procedure

SUBTASK 32-09-02-010-001

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-09-02-740-001

(2) Use the PSEU BITE to test the sensor.

(a) Push the ON/OFF switch to turn on the PSEU BITE display.

(b) Push the down arrow until OTHER FUNCTNS? shows.

(c) Push the YES switch to select OTHER FUNCTNS?

(d) Push the down arrow until SENSOR RIGGING? shows.

(e) Push the YES switch to select SENSOR RIGGING?

(f) Push the down arrow until the applicable sensor identification shows.

NOTE: See the table in (Figure 501) for the sensor identification and location.

(g) Push the YES switch to select the sensor.

(h) Push the YES switch to select GAP GRAPH? The sensor number and gap display meter will show.

NOTE: You can also display the gap value in MILS (1 MIL equals 1/1000th of an inch) or required changes to the sensor gap. Push on the down arrow or NO switch to show these options.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(i) Make sure the PSEU display shows the sensor clearance within tolerance.

NOTE: For a description of the sensor clearance display see (Figure 501).

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-09-02-010-002

(1) Push the ON/OFF switch on the PSEU BITE panel to turn off the PSEU BITE display.

(a) Push the YES switch to confirm that you want to turn off the display.

SUBTASK 32-09-02-840-001

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU) - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the Proximity Switch Electronics Unit (PSEU)

(2) Installation of the Proximity Switch Electronics Unit (PSEU).

TASK 32-09-10-000-801

2. Proximity Switch Electronics Unit (PSEU) Removal

(Figure 401)

A. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)

B. Tools/Equipment

Reference	Description
STD-7394	Cap - Dust, Electrical Connector

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Prepare for the Removal

SUBTASK 32-09-10-480-009

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-10-840-007

(2) Prepare for air mode simulation, do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-09-10-010-002

(3) For access to the PSEU [1], do this step:

Open this access door:

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-10-860-003

(4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

F. PSEU Removal

SUBTASK 32-09-10-020-011

CAUTION

DO NOT TOUCH THE PSEU BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PSEU.

(1) Do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 32-09-10-020-001

(2) Remove the electrical connectors [6] from the PSEU [1].

SUBTASK 32-09-10-860-010

(3) Install dust caps, STD-7394, on the electrical connectors [6] for protection.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-428

SUBTASK 32-09-10-020-003

(4) Remove the bolts [2], washers [3] and bolts [4].

LOM 429-434, 437-447, 450-999

SUBTASK 32-09-10-020-007

(5) Remove the bolts [2], washers [3], bolts [8] and washers [9].

LOM ALL

SUBTASK 32-09-10-020-005

(6) Remove the bonding jumper [5] from the PSEU [1].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-428

NOTE: The bonding jumper [5] may be attached to a grounding stud on the PSEU [1]. Attach the bonding jumper [5] to the lower left mounting bolt on the PSEU [1] when you install the PSEU [1].

LOM 429-434, 437-447, 450-999

(a) Remove the screw [4] and washers [7].

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-10-020-004

(7) Remove the PSEU [1] from the mounting surface.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Proximity Switch Electronics Unit (PSEU) Installation
Figure 401/32-09-10-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Proximity Switch Electronics Unit (PSEU) Installation
Figure 401/32-09-10-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-10-400-801

3. Proximity Switch Electronics Unit (PSEU) Installation

(Figure 401)

A. References

Reference	Title
20-10-34-110-802	Clean Bare, Clad, or Plated Metal with Solvent (P/B 701)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-10-710-801	Proximity Switch Electronics Unit (PSEU) - Operational Test (P/B 501)
52-11-00 P/B 201	FORWARD ENTRY DOOR - MAINTENANCE PRACTICES
52-13-00 P/B 201	AFT ENTRY DOOR - MAINTENANCE PRACTICES
52-22-00 P/B 201	EMERGENCY EXIT DOOR - MAINTENANCE PRACTICES
52-41-00 P/B 201	GALLEY SERVICE DOORS - MAINTENANCE PRACTICES
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES
SWPM 20-20-00, Section 2	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-614	Bonding Meters - Non-Intrinsically Safe (For use in outside Class I, Divisions I & II non-hazardous locations. For hazardous locations, use COM-1550). Part #: 247000 Supplier: 00426 Part #: 620LK Supplier: 1CRL2 Part #: BLR-0003-XX Supplier: KC432 Part #: BT51 Supplier: 00426 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659 Opt Part #: 247001 Supplier: 00426

C. Consumable Materials

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
B00130	Alcohol - Isopropyl	TT-I-735
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
G50398	Pad - Adbrasive, Scotch-Brite Type S, Abrasive Pad	
G50492	Pad - 3M Scotch Brite 7448 Ultra Fine Pad	MIL-A-9962A Type III Grade AAA

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	PSEU	32-09-10-02-030	LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

F. PSEU Installation

SUBTASK 32-09-10-410-007

> **CAUTION** DO NOT TOUCH THE PSEU BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PSEU.

(1) Do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 32-09-10-480-003

(2) Do these steps to prepare the PSEU [1] for the installation:

(a) To remove the sealant, do this task: Clean Bare, Clad, or Plated Metal with Solvent, TASK 20-10-34-110-802.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-428

(b) Clean the mating surfaces on the PSEU [1], washer [3], bolt [4], and bonding jumper [5] (SWPM 20-20-00, Section 2):

1) Use Cleaning Procedure 1 to clean the mating surface on the PSEU [1].

a) Use Scotch-Brite Type S pad, G50398, or Scotch-Brite 7448 pad, G50492.

2) Use Cleaning Procedure 5 to clean the remaining PSEU [1] surfaces and the washer [3], bolt [4], and bonding jumper [5] with solvent, B00184, or alcohol, B00130.

LOM 429-434, 437-447, 450-999

(c) Clean the mating surfaces on the PSEU [1], screw [4], washers [7], and bonding jumper [5] (SWPM 20-20-00, Section 2):

1) Use Cleaning Procedure 1 to clean the mating surface on the PSEU [1].

a) Use Scotch-Brite Type S pad, G50398, or Scotch-Brite 7448 pad, G50492.

2) Use Cleaning Procedure 5 to clean the remaining PSEU [1] surfaces and the screw [4], washers [7], and bonding jumper [5] with solvent, B00184, or alcohol, B00130.

LOM ALL

SUBTASK 32-09-10-410-001

(3) Position the PSEU [1] on the mounting brackets.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-428

SUBTASK 32-09-10-410-002

(4) Install the bolts [4] in the three upper left mounting locations, the bolts [2] and washers [3].

NOTE: The washer [3] and bolt [4] for the lower left mounting location of the PSEU [1] will be installed later.

LOM 429-434, 437-447, 450-999

SUBTASK 32-09-10-420-002

(5) Install the bolts [2], washers [3], bolts [8], and washers [9].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-428

SUBTASK 32-09-10-420-001

(6) Attach the bonding jumper [5] to the PSEU [1] with the bolt [4], and washer [3] in the lower left mounting location.

LOM 429-434, 437-447, 450-999

SUBTASK 32-09-10-420-003

(7) Attach the bonding jumper [5] to the PSEU [1] with the screw [4] and washers [7].

LOM ALL

SUBTASK 32-09-10-760-001

(8) Measure the electrical bonding resistance between the PSEU [1] and airplane structure (SWPM 20-20-00).

(a) Use a non-intrinsically safe bonding meter, COM-614.

(b) Make sure that the electrical bonding resistance is 0.001 ohm (1.0 milliohm) or less.

SUBTASK 32-09-10-390-001

(9) Seal the bonding jumper [5] connector.

(a) Clean the jumper [5] connector with solvent, B00184, or alcohol, B00130.

(b) Seal the jumper [5] connector with sealant, A02315, on the facing side.

SUBTASK 32-09-10-020-006

(10) Remove the dust caps from the electrical connectors [6].

SUBTASK 32-09-10-410-003

(11) Attach the electrical connectors [6] to the PSEU [1].

SUBTASK 32-09-10-860-016

(12) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 32-09-10-840-017

(13) Put the airplane systems back to normal on ground condition (TASK 32-09-00-840-802).

G. PSEU Installation Test

SUBTASK 32-09-10-410-006

(1) Close these doors:

- Forward Entry Door, FORWARD ENTRY DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-11-00/201.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

- Aft Entry Door, AFT ENTRY DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-13-00/201.
- Left and Right Overwing Exit Doors, EMERGENCY EXIT DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-22-00/201.
- Galley Service Doors, GALLEY SERVICE DOORS - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-00/201.

SUBTASK 32-09-10-200-001

(2) Do this task: Proximity Switch Electronics Unit (PSEU) - Operational Test, TASK 32-09-10-710-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU) - ADJUSTMENT/TEST

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) An operational test of the PSEU

(2) A ground test of the PSEU

(3) A test of the PSEU fault light.

(4) PSEU Test using UN-ATE Tool by Technologies Harness Scanner.

TASK 32-09-10-710-801

2. Proximity Switch Electronics Unit (PSEU) - Operational Test

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
36-00-00-860-806	Remove Pressure from the Pneumatic System (P/B 201)
52-11-00 P/B 201	FORWARD ENTRY DOOR - MAINTENANCE PRACTICES
52-13-00 P/B 201	AFT ENTRY DOOR - MAINTENANCE PRACTICES
52-22-00 P/B 201	EMERGENCY EXIT DOOR - MAINTENANCE PRACTICES
52-41-00 P/B 201	GALLEY SERVICE DOORS - MAINTENANCE PRACTICES
71-00-00-700-819-F00	Stop the Engine Procedure (Usual Engine Stop) (P/B 201)
71-00-00-800-807-F00	Start the Engine Procedure (Selection) (P/B 201)

B. Location Zones

Zone	Area
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Test

SUBTASK 32-09-10-840-001

(1) Make sure that there is no hydraulic pressure on the airplane.

(a) If there is hydraulic pressure, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-09-10-840-002

(2) Make sure that the parking brake is set and chocks are installed on the nose and main landing gear (PAGEBLOCK 10-11-05/201).

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SUBTASK 32-09-10-840-026

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-10-840-004

(4) Make sure that the airplane is in this configuration:

(a) The flaps are up.

(b) Make sure that the stab trim is in the green band.

(c) Close these doors:

- Forward Entry Door (PAGEBLOCK 52-11-00/201)
- Aft Entry Door (PAGEBLOCK 52-13-00/201)
- Left and Right Overwing Exit Doors (PAGEBLOCK 52-22-00/201)
- Galley Service Doors (PAGEBLOCK 52-41-00/201).

(d) If it is installed, make sure that the airstairs are in the stowed position.

NOTE: This will prevent the display of airstairs warning messages when the airplane is put in the AIR mode.

SUBTASK 32-09-10-010-001

(5) Open this access panel:

Number	Name/Location
112A	Forward Access Door

E. PSEU Test

SUBTASK 32-09-10-740-001

(1) Push the ON/OFF switch, on the Proximity Switch Electronic Unit (PSEU) Built-In-Test Equipment (BITE) panel, to turn on the BITE display.

SUBTASK 32-09-10-740-002

(2) Start the REPLACE TEST on the PSEU BITE.

(a) When FAULT HISTORY shows, press NO.

(b) When GROUND TESTS shows, press YES.

(c) When REPLACE TEST shows, press YES.

(d) When SEE WARNINGS shows, press YES.

(e) When ARE YOU SURE? shows, press YES.

(f) When TEST IN PROGRESS shows, then goes blank, start the test sequence.

SUBTASK 32-09-10-740-003

(3) Change these inputs to the PSEU.

NOTE: The REPLACE TEST uses signals from the following systems to test the PSEU. The PSEU looks for a change in these inputs. These inputs can be changed in any order.

(a) Use one of these methods to change the state of the engine running relays:

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1) Either start and stop the engines (TASK 71-00-00-800-807-F00 and TASK 71-00-00-700-819-F00).

LOM 402, 406, 411, 412, 415, 416, 422-434, 437-447, 450-999; LOM 404, 407, 420 POST SB 737-30A1063

a) Make sure that the pitot probe cover is removed.

LOM ALL

2) Or, do these steps to simulate the engines running:

a) Make sure that there is no pneumatic power to the engine starters, do this task: Remove Pressure from the Pneumatic System, TASK 36-00-00-860-806.

b) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1
E	3	C01321	ENGINE FUEL ENGINE 2 HPSOV CONT
E	5	C01320	ENGINE FUEL ENGINE 1 HPSOV CONT

c) Put the ENG START levers to the idle position for a minimum of 5 minutes.

(b) Do this step in less than 5 seconds to prevent a LGTV SET fault in Existing Faults.

NOTE: If the fault is set, the PSEU light will come on.

1) Put the NOSE WHEEL STEERING switch to the ALT position and then to the NORM position.

(c) Put the speed brake handle an 1 in. (25.4 mm) or more past the ARMED position and back to the DOWN position.

(d) Open this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(e) Push the right thrust lever fully forward and back to idle.

(f) Push the left thrust lever fully forward and back to idle.

(g) Close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

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(h) Release and reset the parking brake.

(i) Put the landing gear lever to the OFF position and then to the DN position.

(j) Momentarily push the horn cutout switch (Figure 501).

NOTE: If you push the switch for more than 5 seconds, then the test will fail.

(k) Do these steps to cycle the takeoff warning cutoff:

1) Open this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

NOTE: Open circuit breaker C01398 could result in MM 31-52001 TOW INHB FAULT message. Once the CB is closed the fault will clear.

2) Close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

(l) Open or close these doors:

NOTE: If the door is open, you can activate the door switch manually. If the door is closed, it is necessary to unlatch the door. It is not necessary to open the door completely.

1) Forward cargo door

2) Aft cargo door

3) E/E bay access door.

SUBTASK 32-09-10-740-004

(4) The question ARE YOU DONE? will show on the BITE display.

(a) When test is finished, push the YES switch on the BITE display.

1) If no faults are found, TEST PASS will show.

2) If faults are found, a list of faults will show.

a) Go to the Fault Isolation Manual (FIM) to determine the cause of the fault.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-09-10-840-005

(1) Push the ON/OFF switch on the PSEU BITE module to turn off the PSEU BITE.

(a) Press YES.

SUBTASK 32-09-10-840-006

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-09-10-840-011

(3) If it is necessary, do these steps to return the engine running relays back to the not running condition:

(a) Put ENG START lever back to the CUTOFF position.

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(b) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1
E	3	C01321	ENGINE FUEL ENGINE 2 HPSOV CONT
E	5	C01320	ENGINE FUEL ENGINE 1 HPSOV CONT

SUBTASK 32-09-10-840-012

(4) If it is necessary, put the cargo and Electrical / Electronic (E/E) bay access doors to their original pre-test conditions.

SUBTASK 32-09-10-840-024

(5) If it is necessary, put the forward access door to their original pre-test conditions.

SUBTASK 32-09-10-840-025

(6) If it is necessary, release the parking brake.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F97016 S0006574741_V2

Proximity Switch Electronics Unit (PSEU) Test
Figure 501/32-09-10-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT
(EXAMPLE)

F97017 S0006574742_V3

Proximity Switch Electronics Unit (PSEU) Test
Figure 501/32-09-10-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**FLIGHT COMPARTMENT
(EXAMPLE)**

2954537 S0000732069_V1

**Proximity Switch Electronics Unit (PSEU) Test
Figure 501/32-09-10-990-801 (Sheet 3 of 3)**

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-09-10-740-801

3. **Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test**
(Figure 501)

A. **General**

(1) This procedure does the GROUND TEST? portion of the Proximity Switch Electronics Unit (PSEU) BITE.

(2) For GROUND TEST, the PSEU has several menus:

(a) REPLACE TEST? - This tests exercises the inputs to the PSEU and is used when the PSEU is replaced. To do the REPLACE TEST, do this task: Proximity Switch Electronics Unit (PSEU) - Operational Test, TASK 32-09-10-710-801.

(b) SELF TEST? - This performs a self test sequence of the PSEU.

(c) LGTV TEST? - This performs a landing gear transfer valve (LGTV) test.

(d) SPDBRK TEST? - This performs a speedbrake extended warning test.

(e) T/O WARN TEST? - This performs a takeoff warning test.

(f) DISPLAY TEST? - This performs a test of the PSEU display.

(3) This task has a procedure for these menu items:

(a) SELF TEST?

(b) LGTV TEST?

(c) SPDBRK TEST?

(d) T/O WARN TEST?

(e) DISPLAY TEST?

B. **References**

Reference	Title
24-22-00-860-813	Supply External Power (P/B 201)
24-22-00-860-814	Remove External Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
52-11-00 P/B 201	FORWARD ENTRY DOOR - MAINTENANCE PRACTICES
52-13-00 P/B 201	AFT ENTRY DOOR - MAINTENANCE PRACTICES
52-22-00 P/B 201	EMERGENCY EXIT DOOR - MAINTENANCE PRACTICES
FIM 32-09 TASK 801	Proximity Switch Electronics Unit (PSEU) BITE Procedure
FIM 32-09 TASK 809	Proximity Switch Electronics Unit (PSEU) Internal Fault - Fault Isolation

C. **Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

D. **Access Panels**

Number	Name/Location
112A	Forward Access Door

E. **Prepare for the Tests**

SUBTASK 32-09-10-860-006

(1) Do this task: Supply External Power, TASK 24-22-00-860-813.

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SUBTASK 32-09-10-010-003

(2) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-09-10-860-015

(3) Close these doors:

- Forward Entry Door, FORWARD ENTRY DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-11-00/201.
- Aft Entry Door, AFT ENTRY DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-13-00/201.
- Left and Right Overwing Exit Doors, EMERGENCY EXIT DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-22-00/201.

SUBTASK 32-09-10-740-009

(4) Do these steps to start the GROUND TEST on the PSEU.

(a) Push the ON/OFF switch on the PSEU to turn on the BITE.

(b) Push the down arrow until GROUND TEST? shows on the PSEU display.

(c) Push the YES switch to select GROUND TEST.

F. SELF TEST

SUBTASK 32-09-10-740-010

(1) Push the up arrow and down arrow to show SELF TEST?

SUBTASK 32-09-10-740-011

(2) Push the YES button to start the self test.

(a) SEE WARNINGS will show on the BITE display.

WARNING KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES. THESE COMPONENTS CAN MOVE SUDDENLY WHEN THE SELF TEST IS RUN. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(b) ARE YOU SURE? will show on the BITE display.

(c) Push the YES switch after you follow the steps in the warning.

(d) TEST IN PROGRESS will show while the test is run.

(e) When the self test is complete either:

1) FAULT #1 will show.

2) Or, TEST PASS will show.

(f) If there are PSEU faults, then, do this task: FIM 32-09 TASK 809 or FIM 32-09 TASK 801.

(g) If the test passed, then push the MENU switch to return to the SELF TEST? display.

G. LGTV TEST

SUBTASK 32-09-10-840-019

(1) For Hydraulic System A and System B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801

SUBTASK 32-09-10-740-012

(2) Push the up arrow or down arrow until LGTV TEST? shows.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-10-740-013

(3) Push the YES button to start the LGTV TEST.

(a) TEST IN PROGRESS will show on the BITE display.

(b) When the landing gear transfer valve test is complete either:

1) FAULT #1 will show.

2) Or, TEST PASS will show.

(c) If there are PSEU faults, then, do this task: FIM 32-09 TASK 809 or FIM 32-09 TASK 801.

(d) If the test passed, then push the MENU switch to return to the LGTV TEST? display.

SUBTASK 32-09-10-840-020

(4) For Hydraulic System A and System B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

H. SPDBRK TEST

SUBTASK 32-09-10-740-014

(1) Push the up arrow or down arrow until SPDBRK TEST? shows.

SUBTASK 32-09-10-740-015

(2) Push the YES button to start the SPDBRK TEST.

(a) TEST IN PROGRESS will show on the BITE display.

(b) When the speedbrake test is complete either:

1) FAULT #1 will show.

2) Or, TEST PASS will show.

(c) If there are PSEU faults, then, do this task: FIM 32-09 TASK 809 or FIM 32-09 TASK 801.

(d) If the test passed, then push the MENU switch to return to the SPDBRK TEST? display.

I. T/O WARN TEST

SUBTASK 32-09-10-740-016

(1) Push the up arrow or down arrow until T/O WARN TEST? shows.

SUBTASK 32-09-10-740-017

(2) Push the YES button to start the T/O WARN TEST.

(a) TEST IN PROGRESS will show on the BITE display.

(b) When the take off warning test is complete either:

1) FAULT #1 will show.

2) Or, TEST PASS will show.

(c) If there are PSEU faults, then, do this task: FIM 32-09 TASK 809 or FIM 32-09 TASK 801.

(d) If the test passed, then push the MENU switch to return to the T/O WARN TEST? display.

J. DISPLAY TEST

SUBTASK 32-09-10-740-018

(1) Push the up arrow or down arrow until DISPLAY TEST? shows.

SUBTASK 32-09-10-740-019

(2) Push the YES button to start the DISPLAY TEST.

(a) All the pixels on the first quarter of the BITE display will light.

(b) After a short time delay, the second quarter of the BITE display will light.

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(c) After a short time delay, the third quarter of the BITE display will light.

(d) After a short time delay, the fourth quarter of the BITE display will light.

(e) If any of the pixels did not light, then there is a PSEU fault.

(f) Push the MENU switch to return to the DISPLAY TEST? display.

K. If you are finished with the PSEU ground tests, return the airplane to normal.

SUBTASK 32-09-10-860-007

(1) Push the ON/OFF button to turn the PSEU display off.

SUBTASK 32-09-10-410-005

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-09-10-840-021

(3) If it is necessary, put the cargo and E/E bay access doors to their original pre-test conditions.

(4) If it is necessary, put the forward access door to their original pre-test conditions.

SUBTASK 32-09-10-860-008

(5) If it is not necessary, do this task: Remove External Power, TASK 24-22-00-860-814.

END OF TASK

TASK 32-09-10-710-802

4. PSEU Fault Light - Operational Test

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-813	Supply External Power (P/B 201)
24-22-00-860-814	Remove External Power (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-146 Supplier: 81205

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
744	Right Main Landing Gear

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D. Prepare for the Test

SUBTASK 32-09-10-860-011

(1) Do this task: Supply External Power, TASK 24-22-00-860-813.

SUBTASK 32-09-10-840-013

(2) Make sure there is no hydraulic pressure on the airplane. If there is hydraulic pressure, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-09-10-840-014

(3) Make sure chocks are installed on the nose and main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-09-10-840-015

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(4) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-10-840-016

(5) Make sure the airplane is in this configuration:

(a) The flaps are up.

(b) Make sure the stab trim is in the green band.

E. Do a Test of the PSEU Fault Light

LOM 402, 404, 406, 407 PRE SBC 285A1600-32-04; AIRPLANES WITHOUT PSEU -5 OR -6

SUBTASK 32-09-10-210-001

(1) Make sure the PSEU fault light is not on and the Master Caution lights are not on.

LOM 411, 412, 415, 416, 420, 422-434, 437-447, 450-999; LOM 402, 404, 406, 407 POST SBC 285A1600-32-04; AIRPLANES WITH PSEU -5 OR -6

SUBTASK 32-09-10-210-002

(2) Make sure the PSEU fault light is not on.

LOM ALL

SUBTASK 32-09-10-710-001

(3) Open this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI

(a) Make sure the PSEU fault light comes on

LOM 402, 404, 406, 407 PRE SBC 285A1600-32-04; AIRPLANES WITHOUT PSEU -5 OR -6

(b) Push the Master Caution switch

(c) Make sure the PSEU fault light stays on.

LOM ALL

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SUBTASK 32-09-10-710-002

(4) Close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI

LOM 402, 404, 406, 407 PRE SBC 285A1600-32-04; AIRPLANES WITHOUT PSEU -5 OR -6

(a) Push the Master Caution switch

LOM ALL

(b) Make sure the PSEU fault light goes out

LOM 402, 404, 406, 407 PRE SBC 285A1600-32-04; AIRPLANES WITHOUT PSEU -5 OR -6

SUBTASK 32-09-10-710-003

(5) Attach a deactuator to the face of the air/ground sensor, S01010, for the right main landing gear.

NOTE: You will need one A27092-64 deactuator. The proximity sensor test set, SPL-1690 contains one deactuator.

NOTE: As an option, deactuators can be constructed as follows: Material: 5052, 6061, 7075, or 2024 aluminum or sheet copper. For rectangular sensors - 1.5 in. (38 mm) x 0.75 in. (19 mm) x 0.05 in. (1.27 mm).

(a) Push the Master Caution Annunciator Light

(b) Make sure the PSEU fault light comes on

(c) Push the Master Caution switch

(d) Make sure the PSEU fault light goes off.

SUBTASK 32-09-10-080-001

(6) Remove the deactuator from the air/ground sensor, S01010, for the right main landing gear.

LOM ALL

F. Return the Airplane to Its Usual Condition

SUBTASK 32-09-10-860-012

(1) If electrical power is no longer needed, do this task: Remove External Power, TASK 24-22-00-860-814.

——— END OF TASK ———

TASK 32-09-10-750-801

5. Proximity Switch Electronics Unit Test Using UN-ATE Tool by Technologies Harness Scanner

A. General

(1) UN-ATE (Universal Automated Tooling, Electrical) is a device that can be used to examine and show the health of wire bundles and proximity sensors. UN-ATE provides a detailed evaluation of the wire bundles and the proximity sensors that are faulted and degrading.

(a) It has these functions:

1) Gives a condition of system wire bundles and proximity sensors

2) Identifies opened links

3) Identifies shorted links

4) Identifies out of tolerance links.

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B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-09-10-000-801	Proximity Switch Electronics Unit (PSEU) Removal (P/B 401)
32-09-10-400-801	Proximity Switch Electronics Unit (PSEU) Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-17989	Wiring Tester - Automated Wireless Part #: UN-ATE BASIC Supplier: 87Z60
SPL-18162	Interface Cable - UN-ATE Proximity Sensor Electronics Unit Part #: F2300+F2301+C30 Supplier: 87Z60
SPL-18164	Software Module - UN-ATE PSEU Part #: SS-B737NG-PSEU Supplier: 87Z60
STD-15075	Cord - Bungee

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

E. Prepare for the Test

SUBTASK 32-09-10-020-008

(1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

NOTE: Electrical power must be OFF to prevent incorrect fault indications or fault messages from occurring.

SUBTASK 32-09-10-860-017

(2) Make sure that the battery switch is in the OFF position on the P-5 overhead panel.

SUBTASK 32-09-10-760-002

(3) Make sure that all ground power is disconnected.

SUBTASK 32-09-10-020-009

(4) Remove the Proximity Switch Electronic Unit (PSEU) (TASK 32-09-10-000-801).

SUBTASK 32-09-10-480-006

(5) Connect the PSEU connectors on the airplane to the interface cable, SPL-18162 with the optional electronic dust cap to verify if there is any power on the connector.

Table 501/32-09-10-993-803 PSEU Connector to Interface Cable Connections

PSEU Connector	Interface Cable Number	Branch
D10982	2300	A
D10984	2300	B
D10986	2301	A
D10988	2301	B

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Table 501/32-09-10-993-803 PSEU Connector to Interface Cable Connections (Continued)

PSEU Connector	Interface Cable Number	Branch
D11142	C30P61A	N/A

(a) If the electronic dust cap has power, remove the power.

SUBTASK 32-09-10-020-010

(6) If no power is confirmed, remove the electronic dust cap and connect the wiring tester, COM-17989 to the interface cable, SPL-18162.

NOTE: Use a bungee cord, STD-15075 to secure the wiring tester, COM-17989 in place if required.

SUBTASK 32-09-10-480-007

(7) Connect the ground from the airplane to the wiring tester, COM-17989.

SUBTASK 32-09-10-480-008

(8) Log into to the tablet to provide testing and traceability.

(a) Start up the software module, SPL-18164 and login with your user ID.

(b) Identify the location of the aircraft being maintained.

(c) Select the aircraft model

(d) Select the aircraft subsystem, example: PSEU A1 AND A2.

(e) Identify the reason for the test (training/diagnostic/preventative).

(f) The software will now guide you into the set-up with pictograph.

SUBTASK 32-09-10-800-001

(9) Make sure that the handheld tablet has a wireless connection with the wiring tester, COM-17989.

F. Procedure for PSEU Test with UN-ATE

SUBTASK 32-09-10-700-001

(1) Press “Scan” on the handheld tablet's software module, SPL-18164.

NOTE: The UN-ATE will automatically make measurements and present results as per wiring diagram.

NOTE: UN-ATE will highlight in color code links that are open (Blue), shorted (Red), and out of tolerance (Resistance - Orange, Impedance - Purple)

SUBTASK 32-09-10-700-002

(2) Save A1 test results.

SUBTASK 32-09-10-700-003

(3) Load A2 test and traceability for the A2 test.

SUBTASK 32-09-10-700-004

(4) Press “Scan” on the handheld tablet's software module, SPL-18164.

NOTE: The UN-ATE will automatically make measurements and present results as per wiring diagram.

NOTE: UN-ATE will highlight in color code links that are open (Blue), shorted (Red), and out of tolerance (Resistance - Orange, Impedance - Purple)

SUBTASK 32-09-10-700-005

(5) Save A2 test results.

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G. Put the Airplane Back to its Usual Condition

SUBTASK 32-09-10-080-004

(1) Disconnect the wiring tester, COM-17989 from the interface cable, SPL-18162.

NOTE: Remove the bungee cord, STD-15075 if applicable.

SUBTASK 32-09-10-080-005

(2) Remove the interface cable, SPL-18162 from the PSEU connectors.

SUBTASK 32-09-10-420-004

(3) Install the PSEU (TASK 32-09-10-400-801).

SUBTASK 32-09-10-840-022

(4) Make sure that the battery switch is in the ON position on the P-5 overhead panel.

SUBTASK 32-09-10-840-023

(5) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PROXIMITY SENSOR - ADJUSTMENT/TEST

1. General

A. This procedure contains these tasks:

(1) The PSEU proximity sensor functional test with a LCR Meter

(2) The PSEU proximity sensor functional test with a Breakout Box and a LCR Meter.

B. These tasks are functional tests of the proximity switch electronic unit's sensors.

NOTE: If available, use the B737 PSEU Breakout Box (MPN 38-812-01) to measure the inductance and resistance.

C. These tests help to find a proximity sensor's health to prevent the replacement of the PSEU.

D. The proximity sensors supply position data of these systems:

(1) Ground Spoiler

(2) Entry/Service Doors

(3) The Nose and MLG

(4) The Airstairs Door (optional equipment)

E. The proximity sensors stay installed on the airplane during the test.

TASK 32-09-12-700-801

2. PSEU Proximity Sensor - Functional Test with a LCR Meter

(Figure 501, Figure 502, Figure 503)

A. General

(1) This test will measure the resistance and inductance of the 3-wire Proximity Switch Electronic Unit (PSEU) - proximity sensor and wire bundle. And compare the values to a known range. This test also examines the target to the sensor condition.

(2) Obey all applicable warnings, cautions, and maintenance practice instructions when necessary to measure the Proximity Sensor in the test.

(3) Use an LCR meter (Inductance, Capacitance, Resistance), COM-1741 that has a Universal Serial Bus (USB) port to record the data with a PC automatically. For example 878B or 879B have a USB port. Use the instructions included with the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-10-710-801	Proximity Switch Electronics Unit (PSEU) - Operational Test (P/B 501)
52-11-00 P/B 201	FORWARD ENTRY DOOR - MAINTENANCE PRACTICES
52-13-00 P/B 201	AFT ENTRY DOOR - MAINTENANCE PRACTICES
52-22-00 P/B 201	EMERGENCY EXIT DOOR - MAINTENANCE PRACTICES
52-41-00 P/B 201	GALLEY SERVICE DOORS - MAINTENANCE PRACTICES

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(Continued)

Reference	Title
WDM 31-53-11	Wiring Diagram Manual
WDM 32-31-11	WIRING DIAGRAM MANUAL
WDM 32-31-12	Wiring Diagram Manual
WDM 32-64-11	Wiring Diagram Manual
WDM 32-64-12	Wiring Diagram Manual
WDM 52-71-11	Wiring Diagram Manual

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1741	Meter - LCR (Inductance, Capacitance, Resistance; Use COM-20443 for OH bleed loop testing) Part #: 878B Supplier: 08098 Part #: 879B Supplier: 08098 Part #: 880 Supplier: 08098 Part #: U1733P Supplier: 1LQK8 Opt Part #: 875B Supplier: 08098 Opt Part #: 878A Supplier: 08098 Opt Part #: 879 Supplier: 08098
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-146 Supplier: 81205
STD-6481	Voltmeter - Digital
STD-7394	Cap - Dust, Electrical Connector

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

E. Access Panels

Number	Name/Location
112A	Forward Access Door

F. Prepare for the Functional Test

SUBTASK 32-09-12-480-001

WARNING MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-09-12-480-002

(2) Make sure that the chocks are installed at the wheels (PAGEBLOCK 10-11-05/201).

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SUBTASK 32-09-12-010-001

(3) For access to the PSEU, do this step (Figure 502):

Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-09-12-740-003

(4) Check for existing faults. Use the PSEU Built-In-Test Equipment (BITE) panel to make a note of each fault for the PSEU, Nose Landing Gear (NLG), Main Landing Gear (MLG) or Doors:

(a) Push the ON/OFF switch on the PSEU BITE display.

NOTE: The display will show EXISTING FAULTS?

(b) Push the YES switch. The display will show:

1) Either the number of faults.

2) Or the display will show NO FAULTS.

(c) If the display shows the number of faults in the PSEU. Do these steps to record the fault:

1) Push the down arrow to show the first fault.

2) Push the down arrow to show MORE DETAILS?.

3) Do these steps to record the fault number:

a) Push the YES switch.

b) Record the fault number.

NOTE: 31-51xxxx are Takeoff Warning - GSBV
32-01xxxx are Air/Ground - NLG and MLG
32-61xxxx are Landing Gear Indict. and Warning - NLG and MLG
52-71xxxx are Doors - Airstairs/Entry/Service

4) Push the down arrow to see if the fault is latched.

5) Push the down arrow to see if there is more data on the fault.

6) RETURN TO LIST will show when there is no more data for the fault. Push the YES switch to go back to the fault list.

(d) The next fault will show on the BITE display. Do the steps above again to show all the existing faults and data.

(e) If the display shows NO FAULTS, continue.

SUBTASK 32-09-12-740-001

(5) Use the PSEU BITE panel to make a note of each sensor's condition:

(a) Push the ON/OFF switch on the PSEU BITE panel.

1) Or push the MENU switch if the panel is on to display EXISTING FAULTS?.

(b) Push the NO switch until OTHER FUNCTNS? shows.

(c) Push the YES switch to select OTHER FUNCTNS?.

(d) Push the NO switch until I/O MONITOR? shows.

(e) Push the YES switch to select I/O MONITOR?.

(f) Push the YES switch to select SENSORS?.

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(g) Push the down or up arrow until the applicable sensor identification shows.

NOTE: See (Figure 501) for the sensor identification and location.

(h) Make a note of the PSEU data shown for each sensor.

NOTE: For an example of the sensor display see (Figure 503).

TGT-NEAR

TGT-FAR

FAILSAFE

(i) Push the ON/OFF switch on the PSEU BITE panel.

SUBTASK 32-09-12-840-007

(6) Prepare for the air mode simulation (TASK 32-09-00-840-801).

SUBTASK 32-09-12-860-001

(7) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 32-09-12-480-003

CAUTION

DO NOT TOUCH THE PSEU BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PSEU.

(8) Do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 32-09-12-020-001

(9) Remove the electrical connectors [2] J2 through J6 from the PSEU [1].

SUBTASK 32-09-12-480-004

(10) Install dust caps, STD-7394, on the electrical connectors [2].

SUBTASK 32-09-12-210-001

(11) Examine the Aeronautical Radio Incorporated (ARINC) connector pins for damage or corrosion.

(a) Repair if necessary.

G. Measure the Proximity Sensor and Wiring Installation Resistance

SUBTASK 32-09-12-760-001

(1) Refer to the applicable Wiring Diagram Manual (WDM) (WDM 31-53-11, WDM 32-31-11, WDM 32-31-12,WDM 32-64-11, WDM 32-64-12 and WDM 52-71-11) for the 3-wire sensor to PSEU [1] ARINC connector pin callout.

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SUBTASK 32-09-12-760-006

(2) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 (a digital voltmeter, STD-6481 may be used to measure the resistance).

(a) First do the Blue to Yellow measurement.

(b) Then the Red to Yellow measurement.

(c) Alternate connections as needed.

SUBTASK 32-09-12-760-007

(3) Supply power to the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

SUBTASK 32-09-12-760-008

(4) Set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to measure series resistance (Rs) at 120 Hz.

SUBTASK 32-09-12-760-009

(5) Measure the resistance at the ARINC connector pins on the applicable J-connector for each sensor under test and record in the log sheet (Figure 501).

(a) The “DATA HOLD” button is used to "capture" your current measured result.

(b) To make a new measurement, the, "DATA HOLD" must be released, by pressing the button once, then the new measurement can be made.

(c) Record the resistance of sensors in the appropriate space on log sheet. Values to be recorded in hundredths (two numbers right of the decimal point), for example XX.XX or XXX.XX.

SUBTASK 32-09-12-760-010

(6) Compare the measured resistance value to Table 501.

Table 501/32-09-12-993-807 NOMINAL VALUES

VALUE	SENSOR CONDITION
Three-wire Sensors	
Less than 40 mH	Target FAR
40 mH - 50 mH	Correctly rigged NEAR sensor
Greater than 50 mH	Target may be rigged too near to the sensor
Resistance on aircraft (Red-Yellow resistance plus Blue-Yellow resistance): ≤ 390 Ω	
Typical Sensor Inductance Values Using Go Gauges	
Three-wire sensor - Go side 38.20 mH, No-Go side - 36.20 mH	

NOTE: Sensor inductance values will vary between sensor positions because of differences in operation and design requirements. In some condition, the inductance value cannot be achieved. Inductance values outside of the nominal range are permitted if the minimum value of 38.00 mH (Target NEAR) is obtained and no system anomaly is observed.

SUBTASK 32-09-12-760-011

(7) If the measured resistance value is less than 5.00 ohms, this indicates a short circuit condition.

(a) If there is a short circuit, inspect the associated wiring and connectors for contamination or damage.

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SUBTASK 32-09-12-760-012

(8) If the resistance value as measured between the Red and Yellow leads is greater than 100.00 ohms, this indicates a loose contact or wire damage or a defective sensor.

(a) If there is loose contact or wire damage, inspect the associated wiring and connectors for contamination or damage.

SUBTASK 32-09-12-760-013

(9) If the resistance value as measured between the Blue and Yellow leads is greater than 500.00 ohms, this indicates a loose contact or wire damage or a defective sensor.

(a) If there is loose contact or wire damage, inspect the associated wiring and connectors for contamination or damage.

H. Measure the Inductance at the ARINC Connector Pins on the applicable J-connector for each Sensor Under Test - Red-Blue

SUBTASK 32-09-12-760-002

(1) Refer to the applicable WDM (WDM 31-53-11, WDM 32-31-11, WDM 32-31-12,WDM 32-64-11, WDM 32-64-12 and WDM 52-71-11) for the 3-wire sensor to PSEU [1] ARINC connector pin callout.

SUBTASK 32-09-12-760-014

(2) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 for Red to Blue measurement.

SUBTASK 32-09-12-760-015

(3) Supply power to the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

SUBTASK 32-09-12-760-016

(4) Set the LCR meter (Inductance, Capacitance, Resistance), COM-1741, to read series inductance (Ls) at 1 kHz.

SUBTASK 32-09-12-760-017

(5) Measure the inductance and record in the log sheet (Figure 501) for each sensor.

(a) The “DATA HOLD” button is used to "capture" your current measured result.

(b) To make a new measurement, the, "DATA HOLD" must be released, by pressing the button once, then the new measurement can be made.

(c) Record the inductance of sensors in the appropriate space on log sheet. Values to be recorded in hundredths (two numbers right of the decimal point), for example XX.XX or XXX.XX.

(d) If you suspect a faulty sensor, use the applicable proximity sensor test set, SPL-1690, 8-758-01, Proximity Sensor Test Kit – GO-GAUGE to simulate a configuration change of the sensors current position to a target FAR or a target NEAR position.

(e) If the GO-GAUGES are used, compare the measured inductance value to Table 501.

SUBTASK 32-09-12-760-018

(6) Compare the measured inductance value to Table 501.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-09-12-080-001

(1) Remove the dust caps, STD-7394, from the electrical connectors [2].

SUBTASK 32-09-12-420-001

(2) Install the J2 through J6 electrical connectors [2] to the PSEU [1].

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SUBTASK 32-09-12-860-017

(3) Put the airplane systems back to normal on ground condition (TASK 32-09-00-840-802).

SUBTASK 32-09-12-840-003

(4) Make sure that these doors are closed:

(a) Forward Entry Door (PAGEBLOCK 52-11-00/201).

(b) Aft Entry Door (PAGEBLOCK 52-13-00/201).

(c) Left and Right Overwing Exit Doors (PAGEBLOCK 52-22-00/201).

(d) Galley Service Doors (PAGEBLOCK 52-41-00/201).

SUBTASK 32-09-12-860-003

(5) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 32-09-12-710-001

(6) Do this task: Proximity Switch Electronics Unit (PSEU) - Operational Test, TASK 32-09-10-710-801.

SUBTASK 32-09-12-410-001

(7) Close this access door:

Number	Name/Location
112A	Forward Access Door

END OF TASK

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DATE:		LOC:	GROUND TEMP:		
A/C:			FUSELAGE TEMP:		
			RESISTANCE OHMS (MEASURE AT 120HZ)		INDUCTANCE MH (MEAS. AT 1KHZ)
PSEU CABLE	SENSOR EQUIP. NO.	SYSTEM 1 SENSOR INSTALLATION	BLUE -YELLOW (TC RESISTOR)	RED -YELLOW (COILS)	RED-BLUE
J2	S1050	GSBV CLOSED			
J2	S1010	RIGHT ON GND A			
J2	S1014	NOSE ON GND A			
J2	S1012	LEFT ON GND A			
J3	S846	NOSE LKD A			
J3	S73	RIGHT DOWN LKD A			
J3	S845	NOSE DWN A			
J3	S71	LEFT DWN LKD A			
J3	S74	RIGHT UP LKD A			
J3	S72	LEFT UP LKD A			
J4	S200	AFT ENT LKD			
J4	S195	AFT SER LKD			
			RESISTANCE OHMS (MEASURE AT 120HZ)		INDUCTANCE MH (MEAS. AT 1KHZ)
PSEU CABLE	SENSOR EQUIP. NO.	SYSTEM 2 SENSOR INSTALLATION	BLUE -YELLOW (TC RESISTOR)	RED -YELLOW (COILS)	RED-BLUE
J5	S854	NOSE LKD B			
J5	S1016	LEFT UP LKD B			
J5	S301	RIGHT DWN LKD B			
J5	S853	NOSE DWN B			
J5	S302	LEFT DWN LKD B			
J5	S1017	RIGHT UP LKD B			
J6	S1011	RIGHT ON GND B			
J6	S1015	NOSE ON GND B			
J6	S199	FWD ENT LKD			
J6	S1013	LEFT ON GND B			
J6	S194	FWD SER LKD			
J6	S282 1	AIRSTRS LKD			

1 ONLY IF OPTION SELECTED

2912712 S0000697993_V1

Proximity Sensor Performance Values - Log Sheet
Figure 501/32-09-12-990-801

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Proximity Switch Electronics Unit
Figure 502/32-09-12-990-802

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PROXIMITY SWITCH ELECTRONICS UNIT (PSEU)

G25352 S0006574718_V2

Proximity Switch Electronics Unit Bite
Figure 503/32-09-12-990-803

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TASK 32-09-12-700-802

3. PSEU Proximity Sensor - Functional Test with a Breakout Box and a LCR Meter

(Figure 502, Figure 503, Figure 504, Figure 505)

A. General

CAUTION	THE PROXIMITY SENSOR BREAKOUT BOX IS USED ONLY TO EXAMINE BASIC SENSOR HEALTH AND INSTALLATION. DO NOT USE AS A RIGGING TOOL. RIGGING OF SENSORS AND OTHER MAINTENANCE ACTIONS SHOULD BE DONE ONLY IN ACCORDANCE WITH AIRLINE OPERATING AND MAINTENANCE PROCEDURES, APPROVED MAINTENANCE MANUALS, OR DIRECTIVES OF THE APPROPRIATE CERTIFICATION AGENCY.

(1) The test will measure the inductance and resistance of the 3-wire sensors, sensor wires and connectors. And compare the values to a known range. This test also examines the target to sensor conditions.

(2) This test uses the Crane Sensor Test System made up of the following parts:

(a) Proximity Switch Electronic Unit (PSEU) - proximity sensor breakout box, SPL-18742, and a LCR meter (Inductance, Capacitance, Resistance), COM-1741.

(b) Sensors Test Gauge Set.

1) The controls on the face of the proximity sensor breakout box, SPL-18742, are used to select the desired sensor for testing.

a) The proximity sensor breakout box, SPL-18742, does not test two-wire sensors. Two-wire sensors, do not need to be tested.

2) The Sensor Test Gauge Kit consists of six go-gauges, sensor de-actuator tool and an instruction booklet. Use the go-gauges in place of a sensor, if you suspect the sensor is faulty.

(3) Obey all applicable warnings, cautions and maintenance practice instructions when necessary to measure the Proximity Sensor in the test.

(4) Use an LCR meter (Inductance, Capacitance, Resistance), COM-1741, that has a USB port to record the data with a PC automatically. For example 878B or 879B have a USB port. Use the specified instructions included with the LCR meter (Inductance, Capacitance, Resistance), COM-1741. Full instructions are included in the Breakout Box (BOB)'s Sensor Test System.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-10-710-801	Proximity Switch Electronics Unit (PSEU) - Operational Test (P/B 501)
52-11-00 P/B 201	FORWARD ENTRY DOOR - MAINTENANCE PRACTICES
52-13-00 P/B 201	AFT ENTRY DOOR - MAINTENANCE PRACTICES
52-22-00 P/B 201	EMERGENCY EXIT DOOR - MAINTENANCE PRACTICES
52-41-00 P/B 201	GALLEY SERVICE DOORS - MAINTENANCE PRACTICES

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C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1741	Meter - LCR (Inductance, Capacitance, Resistance; Use COM-20443 for OH bleed loop testing) Part #: 878B Supplier: 08098 Part #: 879B Supplier: 08098 Part #: 880 Supplier: 08098 Part #: U1733P Supplier: 1LQK8 Opt Part #: 875B Supplier: 08098 Opt Part #: 878A Supplier: 08098 Opt Part #: 879 Supplier: 08098
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-146 Supplier: 81205
SPL-18742	Breakout Box - Proximity Sensor Part #: 38-812-01 Supplier: 08748
STD-6481	Voltmeter - Digital
STD-7394	Cap - Dust, Electrical Connector

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

E. Access Panels

Number	Name/Location
112A	Forward Access Door

F. Prepare for the Functional Test

SUBTASK 32-09-12-480-005

WARNING MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the Nose Landing Gear (NLG) and Main Landing Gear (MLG) (TASK 32-00-01-480-801).

SUBTASK 32-09-12-480-006

(2) Make sure that the chocks are installed at the wheels (PAGEBLOCK 10-11-05/201).

SUBTASK 32-09-12-010-002

(3) For access to the PSEU, do this step (Figure 502):

Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-09-12-740-004

(4) Check for existing faults, use the PSEU BITE panel to make a note of each fault for the PSEU, NLG, MLG or Doors:

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(a) Push the ON/OFF switch on the PSEU BITE display.

NOTE: The display will show EXISTING FAULTS?

(b) Push the YES switch and the display will show:

1) Either the number of faults.

2) Or the display will show NO FAULTS.

(c) If the display shows the number of faults in the PSEU, do these steps to record the fault:

1) Push the down arrow to show the first fault.

2) Push the down arrow to show MORE DETAILS?.

3) Do these steps to record the fault number:

a) Push the YES switch.

b) Record the fault number.

NOTE: 31-51xxxx are Takeoff Warning - GSBV
32-01xxxx are Air/Ground - NLG and MLG
32-61xxxx are Landing Gear Indict. and Warning - NLG and MLG
52-71xxxx are Doors - Airstairs/Entry/Service

4) Push the down arrow to see if the fault is latched.

5) Push the down arrow to see if there is more data on the fault.

6) There is no more data for the fault if the display shows RETURN TO LIST, push the YES switch to go back to the fault list.

(d) The next fault will show on the BITE display, do the steps above again to show all the existing faults and data.

(e) If the display shows NO FAULTS, continue.

SUBTASK 32-09-12-740-005

(5) Use the PSEU BITE panel to make a note of each sensor's condition:

(a) Push the ON/OFF switch on the PSEU BITE panel.

1) Or push the MENU switch if the panel is on to display EXISTING FAULTS?.

(b) Push the NO switch until OTHER FUNCTNS? shows.

(c) Push the YES switch to select OTHER FUNCTNS?.

(d) Push the NO switch until I/O MONITOR? shows.

(e) Push the YES switch to select I/O MONITOR?.

(f) Push the YES switch to select SENSORS?.

(g) Push the down or up arrow until the applicable sensor identification shows.

NOTE: See (Figure 504) for the sensor identification and location.

(h) Make a note of the PSEU data shown for each sensor.

NOTE: For an example of the sensor display see (Figure 503).
TGT-NEAR
TGT-FAR
FAILSAFE

(i) Push the ON/OFF switch on the PSEU BITE panel.

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SUBTASK 32-09-12-840-008

(6) Prepare for the air mode simulation (TASK 32-09-00-840-801).

SUBTASK 32-09-12-860-004

(7) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 32-09-12-480-007

CAUTION DO NOT TOUCH THE PSEU BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PSEU.

(8) Do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 32-09-12-020-002

(9) Remove the electrical connectors [2] J2 through J6 from the PSEU [1].

SUBTASK 32-09-12-480-008

(10) Install dust caps, STD-7394, on the electrical connectors [2].

SUBTASK 32-09-12-210-003

(11) Examine the Aeronautical Radio Incorporated (ARINC) connector pins for damage or corrosion.

(a) Repair if necessary.

SUBTASK 32-09-12-480-009

(12) Install the proximity sensor breakout box, SPL-18742, cables to the related PSEU [1] cables (for example J2 to J2).

(a) If a fault is suspected in the PSEU [1], test each pin of the ARINC connector for continuity.

1) Set the sensor selector switch to each sensor in its turn.

2) Measure for continuity between the sensor inputs of the ARINC connector and the front panel connectors.

NOTE: No calibration or test is necessary for the proximity sensor breakout box, SPL-18742.

G. Measure the Proximity Sensor and Wiring Installation Resistance

SUBTASK 32-09-12-480-010

(1) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741, leads to the BLUE and YELLOW jacks on the front of the proximity sensor breakout box, SPL-18742.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) A digital voltmeter, STD-6481, may be used to measure the resistance.

SUBTASK 32-09-12-860-005

(2) Set the LCR meter (Inductance, Capacitance, Resistance), COM-1741, to measure series resistance (Rs) at 120 Hz.

SUBTASK 32-09-12-860-006

(3) Push the L/C/R button to change to resistance mode.

SUBTASK 32-09-12-860-007

(4) Push and hold the LCR meter (Inductance, Capacitance, Resistance), COM-1741, button for more than one second to change to series mode.

(a) SER is shown in the middle-right side of the LCR meter (Inductance, Capacitance, Resistance), COM-1741, display.

SUBTASK 32-09-12-760-003

(5) Measure the resistance (BLUE to YELLOW) and record in the log sheet (Figure 504) for each sensor.

(a) The “DATA HOLD” button is used to "capture" your current measured result.

(b) To make a new measurement, the "DATA HOLD" must be released, by pressing the button once, then the new measurement can be made.

(c) Record the resistance of sensors in the appropriate space on log sheet.

1) Values should be recorded in hundredths (two numbers right of the decimal point), for example XX.XX or XXX.XX.

SUBTASK 32-09-12-860-008

(6) Use the proximity sensor breakout box, SPL-18742, controls to set the next sensor.

(a) Measure the resistance again (BLUE to YELLOW) and record for each of the remaining sensors.

SUBTASK 32-09-12-480-011

(7) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741, leads to the RED and YELLOW jacks on the front of the proximity sensor breakout box, SPL-18742.

(a) A digital voltmeter, STD-6481, may be used to measure the resistance.

SUBTASK 32-09-12-760-004

(8) Measure the resistance (RED to YELLOW) and record in the log sheet (Figure 504) for each sensor.

(a) The “DATA HOLD” button is used to "capture" your current measured result.

(b) To make a new measurement, the "DATA HOLD" must be released, by pressing the button once, then the new measurement can be made.

(c) Record the resistance of sensors in the appropriate space on log sheet.

1) Values should be recorded in hundredths (two numbers right of the decimal point), for example XX.XX or XXX.XX.

SUBTASK 32-09-12-200-002

(9) Compare the combined measured resistance to Table 504.

SUBTASK 32-09-12-860-009

(10) Use the proximity sensor breakout box, SPL-18742, controls to set the next sensor.

(a) Measure the resistance again (RED to YELLOW) and record for each of the remaining sensors.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H. Measure the Inductance (Red-Blue) for each Sensor Under Test

SUBTASK 32-09-12-480-012

(1) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741, leads to the RED and BLUE jacks on the front of the proximity sensor breakout box, SPL-18742.

SUBTASK 32-09-12-860-010

(2) Supply power to the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

SUBTASK 32-09-12-860-011

(3) Use Table 502 to set the BOB controls to the appropriate sensor for test.

Table 502/32-09-12-993-803 PSEU PROXIMITY SENSOR BREAKOUT BOX (BOB)

SENSOR EQUIP. NO.	BOB SETTING	PSEU AND BOB CABLE	P/N 38-812-01
	SYSTEM 1 - SW1 POSITION	CONNECTOR	FUNCTION
S1050	1	J2	GSBV CLOSED
S1010	2	J2	RIGHT ON GND A
S1014	3	J2	NOSE ON GND A
S1012	4	J2	LEFT ON GND A
S846	5	J3	NOSE LKD A
S73	6	J3	RIGHT DOWN LKD A
S845	7	J3	NOSE DWN A
S71	8	J3	LEFT DWN LKD A
S74	9	J3	RIGHT UP LKD A
S72	10	J3	LEFT UP LKD A
S200	11	J4	AFT ENT LKD
S195	12	J4	AFT SER LKD
	SYSTEM 2 - SW3 POSITION	CONNECTOR	FUNCTION
S854	1	J5	NOSE LKD B
S1016	2	J5	LEFT UP LKD B
S301	3	J5	RIGHT DWN LKD B
S853	4	J5	NOSE DWN B
S302	5	J5	LEFT DWN LKD B
S1017	6	J5	RIGHT UP LKD B
S1011	7	J6	RIGHT ON GND B
S1015	8	J6	NOSE ON GND B
S199	9	J6	FWD ENT LKD
S1013	10	J6	LEFT ON GND B
S194	11	J6	FWD SER LKD
S282*[1]	12	J6	AIRSTRS LKD

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*[1] Only if airstairs option selected.

SUBTASK 32-09-12-860-012

(4) Set the LCR meter (Inductance, Capacitance, Resistance), COM-1741, to read series inductance (Ls) at 1 kHz.

SUBTASK 32-09-12-760-005

(5) Measure the inductance and record in the log sheet (Figure 504) for each sensor.

(a) The “DATA HOLD” button is used to "capture" your current measured result.

(b) To make a new measurement, the "DATA HOLD" must be released, by pressing the button once, then the new measurement can be made.

(c) Record the sensor inductance values in the applicable space on the log sheet.

1) Values should be recorded to the hundredths position (two numbers to the right of the decimal point), for example XX.XX or XXX.XX.

(d) If you suspect a faulty sensor, use the applicable proximity sensor test set, SPL-1690, 8-758-01, Proximity Sensor Test Kit – Go-Gauge to simulate a configuration change of the sensors current position to a target FAR or a target NEAR position.

SUBTASK 32-09-12-200-004

(6) If the GO-GAUGES are used, compare the measured inductance value to Table 503.

Table 503/32-09-12-993-804 SENSOR TABLE

BOEING SENSOR PART NUMBER	CRANE SENSOR PART NUMBER	TARGET NEAR INDUCTANCE (WITH GO-GAUGE)	TARGET FAR INDUCTANCE (WITH GO-GAUGE)	COIL RESISTANCE RED-YELLOW (TARGET FAR)	RESISTANCE BLUE-YELLOW (TARGET FAR)
10-61226-29	1-899-29	38.0 mH minimum	36.0-37.5 mH	27.0-39.0 Ω	344.5-351.5 Ω
10-61226-30	1-899-30	38.0 mH minimum	36.0-37.5 mH	27.0-33.0 Ω	344.5-351.5 Ω
10-61226-45	80-207-01	38.0 mH minimum	36.0-37.5 mH	27.0-33.0 Ω	344.5-351.5 Ω
10-61226-47	80-207-02	38.0 mH minimum	36.0-37.5 mH	27.0-33.0 Ω	344.5-351.5 Ω

SUBTASK 32-09-12-200-003

(7) Compare the measured inductance value to Table 504.

Table 504/32-09-12-993-805 SENSOR NOMINAL VALUES

VALUE	SENSOR CONDITION
Three-wire Sensors	
35 mH	Target FAR
40 mH - 50 mH	Correctly rigged NEAR sensor
Greater than 50 mH	Target may be rigged too near to the sensor
Resistance on aircraft (Red-Yellow resistance plus Blue-Yellow resistance): ≤ 390 Ω	
Typical Sensor Inductance Values for Go Gauges	
Three-wire sensor - Go side 38.20 mH, No-Go side - 36.20 mH	

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NOTE: Sensor inductance values will vary between sensor positions because of differences in operation and design requirements. In some condition, the inductance value cannot be achieved. Inductance values outside of the nominal range are permitted if the minimum value of 38.00 mH (Target NEAR) is obtained and no system anomaly is observed.

SUBTASK 32-09-12-860-013

(8) Use the proximity sensor breakout box, SPL-18742, controls to set the next sensor.

(a) Measure the inductance again (RED to BLUE) and record for each of the remaining sensors.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-09-12-080-002

(1) Remove the proximity sensor breakout box, SPL-18742, cables from the J2 through J6 cables of the PSEU [1].

SUBTASK 32-09-12-080-003

(2) Remove the dust caps, STD-7394, from the electrical connectors [2].

SUBTASK 32-09-12-420-002

(3) Install the J2 through J6 electrical connectors [2] to the PSEU [1].

SUBTASK 32-09-12-860-018

(4) Put the airplane systems back to normal on ground condition (TASK 32-09-00-840-802).

SUBTASK 32-09-12-840-006

(5) Make sure that these doors are closed:

(a) Forward Entry Door (PAGEBLOCK 52-11-00/201).

(b) Aft Entry Door (PAGEBLOCK 52-13-00/201).

(c) Left and Right Overwing Exit Doors (PAGEBLOCK 52-22-00/201).

(d) Galley Service Doors (PAGEBLOCK 52-41-00/201).

SUBTASK 32-09-12-860-016

(6) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 32-09-12-710-002

(7) Do this task: Proximity Switch Electronics Unit (PSEU) - Operational Test, TASK 32-09-10-710-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-09-12-410-002

(8) Close this access door:

Number	Name/Location
112A	Forward Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DATE:		LOC:		GROUND TEMP:		
A/C:				FUSELAGE TEMP:		
				RESISTANCE OHMS (MEASURE AT 120Hz)		INDUCTANCE mH (MEAS. AT 1KHz)
SENSOR EQUIP. NO.	BREAKOUT BOX SWITCH (SW1) POSITION	PSEU AND BOB CABLE CONNECTOR	SYSTEM 1 SENSOR INSTALLATION	BLUE -YELLOW (TC RESISTOR)	RED -YELLOW (COILS)	RED-BLUE
S1050	1	J2	GSBV CLOSED			
S1010	2	J2	RIGHT ON GND A			
S1014	3	J2	NOSE ON GND A			
S1012	4	J2	LEFT ON GND A			
S846	5	J3	NOSE LKD A			
S73	6	J3	RIGHT DOWN LKD A			
S845	7	J3	NOSE DWN A			
S71	8	J3	LEFT DWN LKD A			
S74	9	J3	RIGHT UP LKD A			
S72	10	J3	LEFT UP LKD A			
S200	11	J4	AFT ENT LKD			
S195	12	J4	AFT SER LKD			
				RESISTANCE OHMS (MEASURE AT 120Hz)		INDUCTANCE mH (MEAS. AT 1KHz)
SENSOR EQUIP. NO.	BREAKOUT BOX SWITCH (SW3) POSITION	PSEU AND BOB CABLE CONNECTOR	SYSTEM 2 SENSOR INSTALLATION	BLUE -YELLOW (TC RESISTOR)	RED -YELLOW (COILS)	RED-BLUE
S854	1	J5	NOSE LKD B			
S1016	2	J5	LEFT UP LKD B			
S301	3	J5	RIGHT DWN LKD B			
S853	4	J5	NOSE DWN B			
S302	5	J5	LEFT DWN LKD B			
S1017	6	J5	RIGHT UP LKD B			
S1011	7	J6	RIGHT ON GND B			
S1015	8	J6	NOSE ON GND B			
S199	9	J6	FWD ENT LKD			
S1013	10	J6	LEFT ON GND B			
S194	11	J6	FWD SER LKD			
S282 1	12	J6	AIRSTRS LKD			

1 ONLY IF OPTION SELECTED

2912717 S0000698206_V2

Proximity Sensor Performance Values - Log Sheet
Figure 504/32-09-12-990-804

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PSEU PROXIMITY SENSOR BREAKOUT BOX

2912719 S0000698309_V2

PSEU Proximity Sensor Breakout Box (BOB)
Figure 505/32-09-12-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR CHARGING VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Main Landing Gear Gas Charging Valve Removal.

(2) Main Landing Gear Gas Charging Valve Installation.

(3) Main Landing Gear Oil Charging Valve Removal.

(4) Main Landing Gear Oil Charging Valve Installation.

B. The gas charging valve is installed on the inboard side of the shock strut. The charging valve is between the trunnion and the lower side strut.

C. The oil charging valve is installed on the aft side of the shock strut.

TASK 32-11-00-000-802

2. Main Landing Gear Gas Charging Valve - Removal

(Figure 201)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Prepare for the Removal

SUBTASK 32-11-00-480-029

WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-00-860-023

(2) Make sure that the chocks are installed at the wheels (PAGEBLOCK 10-11-05/201).

SUBTASK 32-11-00-860-024

(3) Make sure that there is no pressure in the hydraulic systems A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Main Landing Gear Gas Charging Valve Removal

SUBTASK 32-11-00-630-001

> **WARNING** DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(1) Deflate the shock strut [1] for the two main landing gear fully:

NOTE: This task is necessary to keep the airplane level when you do the subsequent steps.

(a) Remove the lockwire [6] from the gas charging valve [4] and shock strut [1].

1) Discard the lockwire [6].

(b) Remove the dust cap [2] for the gas charging valve [4].

(c) Loosen the swivel nut [3] of the gas charging valve [4] for a maximum of two turns.

NOTE: Fluid in the shock strut will have bubbles when you release the pressure. Deflate the shock strut slowly to prevent the leakage of the fluid through the gas charging valve.

(d) Loosen the swivel nut [3] of the gas charging valve [4] fully when all of the pressure in the shock strut [1] is released.

NOTE: The shock strut is fully deflated when the dimension from the lower surface of the outer cylinder to the upper surface of the axle clevis on the inner cylinder is 0.81 in. (20.57 mm) - 1.11 in. (28.19 mm).

SUBTASK 32-11-00-020-031

(2) Remove the gas charging valve [4].

(a) Remove the packing [5] from the gas charging valve [4].

(b) Discard the packing [5].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2159138 S0000474146_V2

Main Landing Gear Gas Charging Valve
Figure 201/32-11-00-990-807

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-00-400-802

3. Main Landing Gear Gas Charging Valve - Installation

(Figure 201)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32 Type I
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Packing	32-11-21-03A-023	LOM ALL

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Installation

SUBTASK 32-11-00-480-030

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-00-860-026

(2) Make sure that the chocks are installed at the wheels (PAGEBLOCK 10-11-05/201).

F. Main Landing Gear Gas Charging Valve Installation

SUBTASK 32-11-00-600-002

(1) To install the new packing [5] on the gas charging valve [4], do these steps:

(a) Lubricate the new packing [5] with fluid, D00467, or fluid, D50022.

(b) Lubricate the surface of the gas charging valve [4] that the packing slides against with fluid, D00467, or fluid, D50022.

(c) Install the packing [5] on the gas charging valve [4].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-00-600-003

(2) Lubricate the threads of the gas charging valve [4] with the fluid for the shock strut [1] (TASK 12-15-31-610-802).

SUBTASK 32-11-00-420-034

(3) Install the gas charging valve [4] on the shock strut [1].

NOTE: The dust cap and swivel nut of the gas charging valve are installed when the shock strut is serviced.

(a) Tighten the body of the gas charging valve [4] to 11 ft-lb (15 N·m) - 13 ft-lb (18 N·m).

(b) Install MS20995C32 lockwire, G01048, on the gas charging valve [4] and shock strut [1] with the double twist method.

(c) Apply compound, A00226, on the gas charging valve [4] and shock strut [1].

NOTE: Apply it to make sure that the seal made by the compound, A00226, will break if the body of the gas charging valve [4] is loosened.

SUBTASK 32-11-00-610-003

(4) Service the shock strut [1], do this task: Main Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-31-610-802.

END OF TASK

TASK 32-11-00-000-803

4. Main Landing Gear Oil Charging Valve Removal

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)
STD-1140	Hose - Flexible, 1/2 Inch ID, BMS 3-11 Resistant, 10 Foot

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for Removal

SUBTASK 32-11-00-800-001

> **CAUTION** DO NOT DEFLATE OR SERVICE THE SHOCK STRUTS WHILE THE TAIL STAND IS INSTALLED. IF YOU DEFLATE OR SERVICE THE SHOCK STRUTS, THE LOAD ON THE TAIL STAND CAN BE TOO LARGE. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

(1) Do not deflate or service the shock struts while the tail stand is installed.

SUBTASK 32-11-00-480-027

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-00-800-002

(3) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-11-00-860-033

(4) Make sure there is no pressure in the hydraulic systems A and B. Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

E. Main Landing Gear Oil Charging Valve Removal

SUBTASK 32-11-00-630-002

> **WARNING** DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

> **WARNING** CLEAR THE AREA BELOW THE WING BEFORE YOU DEFLATE THE SHOCK STRUT. IF YOU DEFLATE ONE SHOCK STRUT, THE WING-TIP CAN MOVE DOWN AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Deflate the shock strut [1] for the Main Landing Gear (MLG) fully:

(a) Remove the dust cap [2] from the gas charging valve [4].

(b) Loosen the swivel nut [3] of the gas charging valve [4] for a maximum of two turns.

NOTE: Fluid in the shock strut [1] will have bubbles when you release the pressure. Deflate the shock strut [1] slowly to prevent the leakage of the fluid through the gas charging valve [4].

(c) Loosen the swivel nut [3] of the gas charging valve [4] fully when all of the pressure in the shock strut [1] is released.

NOTE: The shock strut [1] is fully deflated when the dimension from the lower surface of the outer cylinder to the upper surface of the axle clevis on the inner cylinder is 0.81 in. (21 mm) to 1.11 in. (28.19 mm).

SUBTASK 32-11-00-680-001

(2) Drain the oil from the shock strut [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Remove the cap [8] from the oil charging valve [10].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110 in a position to catch the oil when the oil charging valve [10] is opened.

(c) Install the drain equipment on the oil charging valve [10]:

1) Install the landing gear shock strut drain valve, SPL-1829, on the oil charging valve [10] to drain the shock strut [1].

2) If you wish to drain the shock strut [1] with a quicker method, do the steps that follow:

a) Cut a length of plastic ten foot hose (1/2 inch ID), STD-1140, long enough to reach the container on the floor.

b) Insert a small allen wrench in the end of the length of tubing so that the long end of the allen wrench is flush with the end of the tube and the short end goes through the wall of the tube.

c) Install the ten foot hose (1/2 inch ID), STD-1140 on the oil charging valve [10] so that the allen wrench goes into the check valve and holds it open to drain the oil.

(d) Remove the drain equipment when you have removed all of the oil.

SUBTASK 32-11-00-020-033

(3) Remove the oil charging valve [10] as follows:

(a) Remove the lockwire [7] from the oil charging valve [10].

(b) Remove the oil charging valve [10].

(c) Remove the packing [11] from the oil charging valve [10].

1) Discard the packing [11].

END OF TASK

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Main Landing Gear Oil Charging Valve Installation
Figure 202/32-11-00-990-810 (Sheet 1 of 3)

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B

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Main Landing Gear Oil Charging Valve Installation
Figure 202/32-11-00-990-810 (Sheet 2 of 3)

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Main Landing Gear Oil Charging Valve Installation
Figure 202/32-11-00-990-810 (Sheet 3 of 3)

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TASK 32-11-00-400-803

5. Main Landing Gear Oil Charging Valve Installation

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32 Type I
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
11	Packing	32-11-21-03A-040	LOM ALL

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Installation

SUBTASK 32-11-00-480-026

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-00-860-034

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

F. Main Landing Gear Oil Charging Valve

SUBTASK 32-11-00-420-036

(1) To install the new packing [11] on the oil charging valve [10], do these steps:

(a) Lubricate the new packing [11] with fluid, D00467 or fluid, D50022.

(b) Lubricate the surface of the oil charging valve [10] which the packing slides against with fluid, D00467 or fluid, D50022.

(c) Install the new packing [11] on the oil charging valve [10].

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SUBTASK 32-11-00-640-005

(2) Lubricate the threads of the oil charging valve [10] with the fluid for the shock strut [1].

(a) Refer to the Main Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-31-610-802 for the fluid.

SUBTASK 32-11-00-420-037

(3) Install the oil charging valve [10] on the shock strut [1].

NOTE: The cap [8] is installed when the shock strut [1] is serviced.

(a) Torque the body of the oil charging valve [10] to 22 ft-lb (30 N·m) - 25 ft-lb (34 N·m).

(b) Install lockwire [7] (MS20995C32 lockwire, G01048) on the oil charging valve [10] and the shock strut [1] using the double twist method.

(c) Apply compound, A00226 on the oil charging valve [10] and the shock strut [1].

NOTE: Apply it to make sure the seal made by the compound, A00226, will break if the oil charging valve [10] is loosened.

SUBTASK 32-11-00-600-004

(4) Service the shock strut [1]. Do this task: Main Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-31-610-802.

G. Put the Airplane Back to Its Usual condition

SUBTASK 32-11-00-860-036

(1) If electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the main landing gear

(2) An installation of the main landing gear.

TASK 32-11-00-000-801

2. Main Landing Gear Removal

(Figure 401, Figure 402, Figure 403, Figure 404, and Figure 405)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
20-10-52-000-801	Flexible Hose Removal (P/B 401)
27-51-00-040-801	Trailing Edge Flap System Deactivation (P/B 201)
27-51-00-860-803	Extend the Trailing Edge Flaps (P/B 201)
27-62-00-800-801	Speed Brake Hydraulic Systems A and B Pressurization (P/B 201)
27-62-51-000-801	Ground Spoiler Interlock Valve Cable Removal (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-61-000-802	Main Landing Gear Lower Side Strut Removal (P/B 401)
32-13-11-000-803	Main Landing Gear Door Assembly Removal (P/B 401)
32-13-21-000-802	Main Landing Gear Wing Door Removal (P/B 401)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)
32-45-11-000-801	Main Landing Gear Wheel and Tire Assembly Removal (P/B 401)
57-15-00-200-802	Main Landing Gear Beam Hanger Link - Free Play Check (P/B 601)
57-16-01-000-801	MLG Forward Trunnion Housing Assembly - Removal (P/B 401)
57-16-01-400-801	MLG Forward Trunnion Housing Assembly - Installation (P/B 401)
57-16-02-000-801	MLG Aft Trunnion Bearing Assembly Removal (P/B 401)
57-16-02-400-801	MLG Aft Trunnion Bearing Assembly Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-15434	OMNI ARM Aircraft Maintenance Fixture Part #: NB-800 Supplier: 1T0V3 Opt Part #: NBH Supplier: 1T0V3

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(Continued)

Reference	Description
SPL-1362	Wrench Adapter, C32029-6 or C32029-96 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1363	Wrench Adapter, C32029-7 or C32029-98 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1365	Thread Protector, C32029-9 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1366	Thread Protector, C32029-10 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1367	Slug Driver, C32029-11 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1371	Thread Protector, C32029-15 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1372	Thread Protector, C32029-16 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1744	Lock Set - Inboard Ground Spoiler Actuator (Contains 4 Lock Assemblies) Part #: C27046-13 Supplier: 81205 Opt Part #: C27046-1 Supplier: 81205
SPL-1862	Removal/Installation Equipment - Pin, Aft Trunnion MLG Part #: C32031-22 Supplier: 81205 Opt Part #: C32031-1 Supplier: 81205
SPL-1869	Removal/Installation Equipment - Main Landing Gear Part #: C32034-343 Supplier: 81205 Opt Part #: C32034-227 Supplier: 81205 Opt Part #: C32034-273 Supplier: 81205 Opt Part #: C32034-339 Supplier: 81205
SPL-1871	Retention Straps - Shock Strut, NLG/MLG Part #: C32030 -31 Supplier: 81205 Opt Part #: C32030-10 Supplier: 81205
SPL-14021	Wrench Adapter, C32029-48 or C32029-90 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

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(Continued)

Reference	Description
SPL-14022	Wrench Adapter, C32029-49 or C32029-88 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-14023	Wrench Adapter, C32029-50 or C32029-89 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-14024	Thread Protector , C32029-51 (included in C32029 Kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Access Panels

Number	Name/Location
551BB	Lower Inboard Fixed Trailing Edge, Gear Adjustment Door
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551CB	Lower Inboard Fixed Trailing Edge, Gear Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651BB	Lower Inboard Fixed Trailing Edge, Gear Door Adjustment
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651CB	Lower Inboard Fixed Trailing Edge, Gear Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

E. Prepare for the Removal

NOTE: Omni Arm Tool maintenance fixture, COM-15434, can be used as an alternate to Dolly Assembly R/I equipment, SPL-1869. This procedure provides instructions to remove and install the main landing gear with the Dolly Assembly. Refer to manufacturers instructions for use of the Omni Arm Tool.

SUBTASK 32-11-00-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-00-480-025

(2) Make sure that the chocks are installed around the tires (PAGEBLOCK 10-11-05/201).

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SUBTASK 32-11-00-020-001

WARNING	FULLY DEFLATE THE SHOCK STRUT BEFORE YOU REMOVE THE VALVE BODY. IF YOU REMOVE THE VALVE BODY WHEN THERE IS PRESSURE, THE PRESSURE CAN BLOW THE VALVE BODY OUT. IF YOU DO NOT OBEY, INJURY TO PERSONS CAN OCCUR.

CAUTION	DO NOT DEFLATE OR SERVICE THE SHOCK STRUTS WHILE THE TAIL STAND IS INSTALLED. IF YOU DEFLATE OR SERVICE THE SHOCK STRUTS, THE LOAD ON THE TAIL STAND CAN BE TOO LARGE. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

(3) Deflate the shock strut [1] for the two main landing gear fully.

NOTE: This task is necessary to keep the airplane level when you do the subsequent steps.

(a) Remove the cap [4] for the air valve [2].

(b) Loosen the swivel nut [3] for a maximum of two turns.

NOTE: Fluid in the shock strut [1] will have bubbles when you release the pressure. Deflate the shock strut slowly to prevent the leakage of the fluid through the air valve [2].

(c) Loosen the swivel nut [3] fully when all of the pressure in the shock strut [1] is released.

NOTE: The shock strut [1] is fully deflated when the dimension from the lower surface of the outer cylinder to the upper surface of the axle clevis on the inner cylinder is 0.9 in. (2.3 cm).

SUBTASK 32-11-00-480-002

WARNING	DO AN INSPECTION OF THE STRAP FOR CORRECT INSTALLATION AND DAMAGE BEFORE YOU USE IT. INCORRECT INSTALLATION OR DAMAGE CAN CAUSE THE STRAP TO BREAK. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Install the retention strap, SPL-1871, with the marker facing up, to hold the shock strut [1] in its compressed position.

NOTE: Two straps are required to be used to hold the inner cylinder secure.

SUBTASK 32-11-00-480-022

(5) Lift the airplane with the jacks until the tires are off of the ground, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-11-00-860-029

(6) Extend the trailing edge flaps fully, do this task: Extend the Trailing Edge Flaps, TASK 27-51-00-860-803.

NOTE: This step will provide access to the aft trunnion pin [19].

SUBTASK 32-11-00-860-030

(7) Do this task: Trailing Edge Flap System Deactivation, TASK 27-51-00-040-801.

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SUBTASK 32-11-00-860-031

WARNING	MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(8) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, TASK 27-62-00-800-801.

SUBTASK 32-11-00-860-018

(9) Put the speed brake lever in the UP position to lift the ground spoilers.

SUBTASK 32-11-00-480-021

(10) Install the lock set, SPL-1744, for the applicable ground spoiler.

SUBTASK 32-11-00-860-017

(11) Put the SPOILER A and B switches, on the P5-3 flight control panel, to the OFF position to remove the hydraulic power from the flight spoilers.

SUBTASK 32-11-00-860-004

(12) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-00-860-005

(13) Push the brake pedals a minimum of twelve times to remove the pressure from the brake lines.

SUBTASK 32-11-00-860-038

(14) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
E	4	C00700	HEATERS DRAIN MAST AIR

SUBTASK 32-11-00-860-003

(15) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
B	16	C01346	LANDING GEAR PARKING BRAKE
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

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SUBTASK 32-11-00-200-002

(16) Do this task: Main Landing Gear Beam Hanger Link - Free Play Check, TASK 57-15-00-200-802.

NOTE: Free play check is necessary, when the landing gear is replaced according to the scheduled restoration task (MPD Item Number 32-040-01 or 32-040-02). If the landing gear is not being replaced as a scheduled restoration task (MPD Item Number 32-040-01 or 32-040-02), then the free play check is optional.

SUBTASK 32-11-00-010-003

(17) Remove the applicable access panel:

(a) For the left landing gear, open these access panels:

Number	Name/Location
551BB	Lower Inboard Fixed Trailing Edge, Gear Adjustment Door
551CB	Lower Inboard Fixed Trailing Edge, Gear Access Panel

(b) For the right landing gear, open these access panels:

Number	Name/Location
651BB	Lower Inboard Fixed Trailing Edge, Gear Door Adjustment
651CB	Lower Inboard Fixed Trailing Edge, Gear Access Panel

(c) Open these access panels:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

SUBTASK 32-11-00-020-029

(18) Do this task: Main Landing Gear Wheel and Tire Assembly Removal, TASK 32-45-11-000-801.

SUBTASK 32-11-00-020-030

(19) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

SUBTASK 32-11-00-020-002

(20) Do this task: Main Landing Gear Door Assembly Removal, TASK 32-13-11-000-803.

SUBTASK 32-11-00-020-003

(21) Do this task: Main Landing Gear Wing Door Removal, TASK 32-13-21-000-802.

SUBTASK 32-11-00-020-004

(22) Do this task: Main Landing Gear Lower Side Strut Removal, TASK 32-11-61-000-802.

SUBTASK 32-11-00-020-019

(23) Disconnect the reaction link assembly [30] from the outer cylinder trunnion [33].

(a) Remove the cotter pin [41], nut [40], and washer [39] from the crossbolt [31].

(b) Remove the crossbolt [31] from the reaction link pin [32].

(c) Remove the end cap [42] from the reaction link pin [32].

(d) Use the slug driver, C32029-11, SPL-1367, to remove the reaction link pin [32] that holds the reaction link assembly [30] to the trunnion [33].

SUBTASK 32-11-00-020-020

(24) Remove the nuts [37], washer [35], washer [36], and bolts [34] to disconnect the turnbuckle [38] from the bracket.

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SUBTASK 32-11-00-020-021

(25) Disconnect the retract actuator [43] from the main gear trunnion.

(a) Remove the cotter pin [56], nut [47], and washer [46] from the safety bolt [44].

(b) Remove the bolt [44] from the actuator attach pin [50].

(c) Use the wrench adapter, C32029-7 or C32029-98, SPL-1363, to hold the head of the actuator attach pin [50].

(d) Remove the nut [45] and washer [48] from the actuator attach pin [50].

(e) Remove the wrench adapter, C32029-7 or C32029-98, SPL-1363, from the head of the actuator attach pin [50].

(f) Install the thread protector, C32029-16, SPL-1372, on the actuator attach pin [50].

(g) Remove the actuator attach pin [50] to disconnect the retract actuator [43] from the main gear trunnion.

(h) Remove the thread protector, C32029-16, SPL-1372, from the actuator attach pin [50].

(i) Remove the spacers [49].

SUBTASK 32-11-00-020-022

(26) Disconnect the walking beam [51] from the main gear trunnion.

(a) Remove the cotter pin [57], nut [47], and washer [46] from the safety bolt [54].

(b) Remove the safety bolt [54] from the walking beam attach pin [52].

(c) Use the wrench adapter, C32029-6 or C32029-96, SPL-1362, to hold the head of the walking beam attach pin [52].

(d) Remove the nut [55] and washer [53].

(e) Remove the wrench adapter, C32029-6 or C32029-96, SPL-1362, from the head of the walking beam attach pin [52].

(f) Install the thread protector, C32029-15, SPL-1371, on the walking beam attach pin [52].

(g) Remove the walking beam attach pin [52] to disconnect the walking beam [51] from the main gear trunnion.

(h) Remove the thread protector, C32029-15, SPL-1371, from the walking beam attach pin [52].

SUBTASK 32-11-00-480-008

(27) Use rope to hold the disconnected ends of the walking beam [51] and retract actuator [43], such that the ends will be out of the way when you remove the main landing gear [93].

SUBTASK 32-11-00-010-004

(28) Remove the applicable access panel:

For the left wing, open this access panel:

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel

For the right wing, open this access panel:

Number	Name/Location
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel

SUBTASK 32-11-00-020-017

(29) Remove the hose guide [18].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-00-020-006

(30) If you will remove the right gear, disconnect the interlock valve cable of the ground spoiler, do this task: Ground Spoiler Interlock Valve Cable Removal, TASK 27-62-51-000-801.

F. Main Landing Gear Removal

SUBTASK 32-11-00-020-007

(1) Disconnect the brake hose assembly [6] and hydraulic return shimmy damper line [114] (TASK 20-10-52-000-801).

(a) Put a tag to identify the brake hose assembly [6] and hydraulic return shimmy damper line [114] to prevent the crossing of the hoses during the installation.

(b) Disconnect the brake hose assembly [6] and hydraulic return shimmy damper line [114] from the elbow [5].

(c) Put plugs in the brake hose assembly [6] and hydraulic return shimmy damper line [114].

(d) Put caps on the elbow [5].

(e) Move the brake hose assembly [6] and hydraulic return shimmy damper line [114] away from the work area.

SUBTASK 32-11-00-020-008

(2) Disconnect the electrical connector [11].

(a) Remove the lockwire from the electrical connector [11].

(b) Remove the screws [7], washers [8], clamps [9], and nuts [10] that hold the electrical connector [11] to the structure.

(c) Disconnect the electrical connector [11] from the electrical connector.

(d) Put cap on the electrical connector [11].

(e) Pull the electrical connector [11] out of the hose guide [12].

(f) Wind the electrical connector [11] into loop.

SUBTASK 32-11-00-020-009

(3) Disconnect the electrical connector [13].

(a) Remove the lockwire from the electrical connector [13].

(b) Remove the screws [14], washers [15], clamps [16], and nuts [17] that hold the electrical connector [13] to the hose guide [18].

(c) Disconnect the electrical connector [13] from the electrical connector.

(d) Put cap on the electrical connector [13].

(e) Wind the electrical connector [13] into loop.

SUBTASK 32-11-00-020-025

(4) Remove the aft trunnion cross bolt [23].

(a) Remove the pin [20], nut [21], and washer [22] from the aft trunnion cross bolt [23].

1) Use the wrench adapter, C32029-48 or C32029-90, SPL-14021, to hold the head of the aft trunnion cross bolt [23].

(b) Install the thread protector, C32029-10, SPL-1366, on the aft trunnion cross bolt [23].

(c) Remove the aft trunnion cross bolt [23] to disconnect the aft trunnion pin [19] from the aft trunnion.

(d) Remove the thread protector, C32029-10, SPL-1366, from the aft trunnion cross bolt [23].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-00-020-024

(5) Remove the forward trunnion cross bolt [28].

(a) Remove the pin [24], nut [25], and washer [26] from the forward trunnion cross bolt [28].

1) Use the wrench adapter, C32029-49 or C32029-88, SPL-14022, or wrench adapter, C32029-50 or C32029-89, SPL-14023, to hold the head of the forward trunnion cross bolt [28].

(b) Install the thread protector, C32029-9, SPL-1365, or thread protector, C32029-51, SPL-14024, on the forward trunnion cross bolt [28].

(c) Remove the forward trunnion cross bolt [28] to disconnect the forward trunnion from the forward trunnion bearing pin [29].

(d) Remove the thread protector, C32029-9, SPL-1365, or thread protector, C32029-51, SPL-14024, from the forward trunnion cross bolt [28].

SUBTASK 32-11-00-480-009

CAUTION	MAKE SURE THAT THE FORWARD TRUNNION BEARING PIN DOES NOT MOVE ON THE PROTECTOR ASSEMBLY DURING THE REMOVAL OR INSTALLATION OF THE MAIN LANDING GEAR. IF THIS CONDITION OCCURS, IT CAN CAUSE DAMAGE TO THE PIN.

(6) Install the protector assembly [92], (C32034-228/-235).

NOTE: The protector assembly is a part of this tool set R/I equipment, SPL-1869.

NOTE: The protector assembly will prevent damage to the forward trunnion bearing pin during removal or installation of the main landing gear.

(a) Put the protector assembly [92], (C32034-228/-235) on the forward trunnion bearing pin [29].

(b) Secure in place with tape.

SUBTASK 32-11-00-480-010

(7) Attach the support assembly [96], (C32034-212) to the main landing gear [93].

NOTE: A minimum of two persons are necessary to do this task.

(a) Make sure that the side strut attach assembly [94], (C32034-14) is not attached to the support assembly [96], (C32034-212) and jackball pin is removed from the hole in the jackball fitting.

NOTE: The jackball fitting is located on the support assembly [96], (C32034-212).

(b) Put the side strut attach assembly [94], (C32034-14) into the lower side strut attach point on the main landing gear [93].

1) Make sure that the stenciled plate of the assembly is in vertical and in the up position.

2) Install the washer, and nut finger tight on the threaded end of the side strut attach assembly [94], (C32034-14).

(c) Put the support assembly [96], (C32034-212) in its position on the aft side of the main landing gear [93].

1) Make sure that the jackball fitting on the support assembly is fully engaged on the jacking ball of the main landing gear.

(d) If it is necessary, align the holes in the support assembly [96], (C32034-212) with the jacking ball hole for the installation of the jackball pin.

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(e) Put the jackball pin through the jackball fitting and jacking ball of the main landing gear [93].

(f) Install the lynch pin in the jackball pin.

(g) Loosen the nut that holds the side strut attach assembly [94], (C32034-14) such that the stenciled plate can be attached to the studs on the side strut support assembly [97], (C32034-12).

1) If it is necessary, adjust the adjustable square support tube of the side strut support assembly [97], (C32034-12).

(h) Tighten the two hand knobs to hold the stenciled plate to the studs on the side strut support assembly [97], (C32034-12).

(i) Tighten the nut that holds the side strut attach assembly [94], (C32034-14) to the lower side strut attach point.

SUBTASK 32-11-00-840-001

(8) Lift the airplane with the jacks until the lower surface of the housing assembly, for the forward trunnion bearing pin [29], is 97 ±2 in. (246 ±5 cm) above the ground (TASK 07-11-01-580-815) (View B-B, Figure 401).

(a) Make sure to keep the airplane level.

SUBTASK 32-11-00-480-011

(9) Attach the dolly assembly [98], (C32034-213) to the support assembly [96], (C32034-212).

NOTE: A minimum of two persons are necessary to do this task.

(a) If installed, remove the transportation support assembly and aft tire support assembly from the dolly assembly [98], (C32034-213).

(b) From the aft side, carefully move the dolly assembly [98], (C32034-213) in the forward direction under the wing.

(c) Push the dolly assembly [98], (C32034-213) aft such that the boom arm [91], (C32034-214) points forward of the main landing gear [93] and legs are parallel to the fuselage and in the center with the main landing gear [93].

(d) Lift or lower the boom arm [91], (C32034-214) until you can connect the lift link [95], (C32034-34) to the support assembly [96], (C32034-212).

(e) Install the pins to hold the lift link [95], (C32034-34) to the support assembly [96], (C32034-212).

(f) Connect the winch assembly [99], (C32034-207) to the support assembly [96], (C32034-212) with the snapper pin.

SUBTASK 32-11-00-020-011

WARNING

MAKE SURE THAT THE HYDRAULIC PRESSURE IS BELOW 5000 PSIG (34,474 KPA). IF YOU CONTINUE WHEN THE HYDRAULIC PRESSURE IS 5000 (34,474 KPA) OR HIGHER, A BINDING CONDITION WILL OCCUR. A BINDING CONDITION CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(10) Prepare the dolly assembly [98], (C32034-213) to disconnect the aft trunnion.

(a) Operate the hydraulic pump on the dolly assembly [98], (C32034-213) until approximately 1500 psi (10,342 kPa) is shown on the gage.

1) Make sure that the dolly assembly [98], (C32034-213) stays in center with the main landing gear [93].

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(b) Make sure that the swivel locks for the single caster wheels are released.

(c) Use the pry lever bar to remove the load off of the caster wheels one at a time.

(d) Use the lever bar assemblies to turn the single caster wheels parallel to the legs of the dolly assembly [98], (C32034-213).

1) Lock the swivel locks for the single wheel casters.

(e) Operate the hydraulic pump on the dolly assembly [98], (C32034-213) to decrease the weight of the main landing gear from the aft trunnion pin [19].

NOTE: The amount of pressure required to perform this step will depend on how many components are installed on the gear at the time of removal, and it will vary approximately between 2500 psi (17,237 kPa) to 4500 psi (31,026 kPa).

(f) Put chocks on all the caster wheels.

SUBTASK 32-11-00-480-012

(11) Use the pin R/I equipment, SPL-1862, to push the aft trunnion pin [19] into the aft trunnion.

(a) Attach the push adapter [75] to the shaft [71].

(b) Put the push adapter [75] through the pin access hole in the main landing gear beam.

(c) Push the slide hammer [72] until the aft trunnion pin [19] is disconnected from the aft trunnion bearing and it is inside the aft trunnion.

SUBTASK 32-11-00-480-013

(12) Use tie wraps to hold the aft trunnion pin [19] inside the aft trunnion.

NOTE: This will prevent the aft trunnion pin from falling out when you do the subsequent steps.

SUBTASK 32-11-00-950-003

(13) Put protective tape on the outer edge of the aft trunnion to protect its surface finish from scratching.

SUBTASK 32-11-00-420-021

WARNING

MAKE SURE THAT THE HYDRAULIC PRESSURE IS BELOW 5000 PSIG (34,474 KPA). IF YOU CONTINUE WHEN THE HYDRAULIC PRESSURE IS 5000 (34,474 KPA) OR HIGHER, A BINDING CONDITION WILL OCCUR. A BINDING CONDITION CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(14) Lower the aft trunnion.

NOTE: The initial main landing gear [93] removal path is done with the forward trunnion bearing pin [29] attached to the forward trunnion. This removal path follows a combination of movements from lowering and moving the aft trunnion inboard while the main landing gear pivots about the forward trunnion bearing pin.

(a) Make sure to lock the swivel locks for the caster wheels when the main landing gear [93] pivots about the forward trunnion bearing pin [29] as follows:

1) Use the pry lever bar to remove the load off of the caster wheels one at a time.

2) Lock the single wheel casters perpendicular to the forward trunnion pivot axis approximately 38 degrees, and 90 degrees for the double wheel caster.

(b) Put the fork end of the lever bar assemblies on the rectangular tubing above the single wheel casters.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Hold the lever bar assemblies to slowly push the aft end of the dolly assembly [98], (C32034-213) inboard.

1) Make sure that the swivel locks for all the caster wheels are released.

(d) Do the steps below to lower the aft trunnion inboard while at the same time the aft end of the main landing gear [93] moves inboard:

NOTE: When lifting or lowering the aft trunnion, put the single caster wheels parallel to the dolly assembly legs and lock the swivel locks.

1) Use the winch assembly [99], (C32034-207) to pull the bottom of the main landing gear [93] forward.

2) Use the manual valve on the hydraulic pump to lower the boom arm [91], (C32034-214).

3) Continue to lower and to move the aft trunnion inboard until it clears the following components:

a) The lower flange of the main landing gear beam

b) The seals for the lower trailing edge panel

c) The seal for the support beam

d) The aft trunnion just below the lower trailing edge panel.

SUBTASK 32-11-00-020-013

WARNING

MAKE SURE THAT THE HYDRAULIC PRESSURE IS BELOW 5000 PSIG (34,474 KPA). IF YOU CONTINUE WHEN THE HYDRAULIC PRESSURE IS 5000 (34,474 KPA) OR HIGHER, A BINDING CONDITION WILL OCCUR. A BINDING CONDITION CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(15) Disconnect the forward trunnion.

(a) Make sure that the swivel locks for the caster wheels are released.

(b) Use the lever bar assemblies to push the dolly assembly [98], (C32034-213) outboard such that the axis of the forward trunnion bearing pin [29] is perpendicular to the housing assembly and rear spar.

(c) Use the pry lever bar to remove the load off of the caster wheels one at a time.

(d) If it is necessary, use the lever bar assemblies and put the single caster wheels parallel to the legs of the dolly assembly [98], (C32034-213).

1) Lock the swivel locks for the single caster wheels.

(e) Attach the outer cylinder strap assembly to the hoist ring on the end of the boom arm [91], (C32034–214) and around the outer cylinder at the aft trunnion.

(f) Remove the tension from the strap.

(g) Put the chocks approximately 2 in. (5 cm) aft of the single wheel casters, and in contact with the double wheel caster to limit the movement of the dolly assembly [98], (C32034-213).

(h) Make sure that the chock is in contact with the double wheel caster to prevent the movement of the dolly assembly [98], (C32034-213).

(i) Put the fork end of the lever bar assemblies on the rectangular tubing above the single wheel casters.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(j) Hold the lever bar assemblies to slowly push on the dolly assembly [98], (C32034–213) such that the forward trunnion will come off of the forward trunnion bearing pin [29].

1) Make sure that the swivel locks for all the caster wheels are released.

(k) Continue to push the dolly assembly [98], (C32034-213) while lowering the aft end of the main landing gear [93] with the use of the winch assembly [99], (C32034-207) and boom arm [91], (C32034-214).

(l) Continue this movement until the aft trunnion will clear the lower trailing edge panel seals, the forward trunnion is disconnected from the forward trunnion bearing pin [29].

LOM 404, 411, 416, 420, 422, 425 PRE SB 737-32-1448

NOTE: The retaining ring, the support ring assembly, and forward trunnion seal are still on the airplane until the forward trunnion is disconnected.

LOM 402, 406, 407, 412, 415, 423, 424, 426-434, 437-447, 450-999; LOM 404, 411, 416, 420, 422, 425 POST SB 737-32-1448

NOTE: The retaining ring and seal are still on the airplane until the forward trunnion is disconnected.

LOM ALL

(m) Remove the outer cylinder strap assembly from the hoist ring and outer cylinder.

(n) Use the boom arm [91], (C32034-214) and winch assembly [99], (C32034-207) to lower the main landing gear [93], such that the dolly assembly [98], (C32034-213), with the main landing gear [93] can be removed below the wing.

SUBTASK 32-11-00-580-002

(16) Lower the main landing gear [93] on the tire support assemblies, such that the support assembly [96], (C32034-212) rests in the cradle of the transportation support assembly.

SUBTASK 32-11-00-480-014

(17) Use the retention strap, SPL-1871, to hold the main landing gear [93].

SUBTASK 32-11-00-480-023

(18) Tighten the adjustable square support tube of the side strut support assembly [97], (C32034-12) with the two adjustable handles.

SUBTASK 32-11-00-020-026

CAUTION DO NOT TOW THE MAIN LANDING-GEAR SUPPORT EQUIPMENT MORE THAN 5 MPH (8 KM/H). THE MAIN LANDING-GEAR SUPPORT EQUIPMENT IS FOR SHOP OPERATION ONLY. IF YOU DO NOT OBEY, DAMAGE TO THE EQUIPMENT CAN OCCUR.

CAUTION INSTALL THE RETENTION STRAP OR EQUIVALENT ON THE SHOCK STRUT WHEN YOU REMOVE THE MAIN LANDING-GEAR FIXTURE. THE SHOCK STRUT CAN EXTEND AND DAMAGE TO THE EQUIPMENT CAN OCCUR.

(19) Remove the dolly assembly [98], (C32034-213), with main landing gear [93] from the work area.

SUBTASK 32-11-00-210-006

(20) Do a general visual inspection of the main landing gear [93] at the forward trunnion bearing pin [29] and aft trunnion pin [19] locations and the visible surfaces of the forward trunnion bearing pin [29] and aft trunnion pin [19] for signs of corrosion and chrome plating damage.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) If any sign of corrosion or chrome plating damage is found for the forward trunnion bearing pin [29], do these tasks:

- MLG Forward Trunnion Housing Assembly - Removal, TASK 57-16-01-000-801
- MLG Forward Trunnion Housing Assembly - Installation, TASK 57-16-01-400-801.

(b) If any sign of corrosion or chrome plating damage is found for the aft trunnion pin [19], do these tasks:

- MLG Aft Trunnion Bearing Assembly Removal, TASK 57-16-02-000-801
- MLG Aft Trunnion Bearing Assembly Installation, TASK 57-16-02-400-801.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

SHOCK STRUT INFLATION VALVE

A

G02335 S0006574755_V2

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 1 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

SHOCK STRUT INFLATION VALVE

A

3034056 S0000804186_V1

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 2 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

HYDRAULIC LINES AND ELECTRICAL CONNECTORS

B

G02341 S0006574756_V3

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 3 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ELECTRICAL CONNECTOR AND TRUNNION SUPPORTS

C

G02347 S0006574757_V6

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 4 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 5 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 6 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SIDE STRUT REACTION LINK CONNECTION

D

H16492 S0006574759_V5

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 7 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H16494 S0006574760_V3

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 8 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2804814 S0000643746_V2

Main Landing Gear Installation
Figure 401/32-11-00-990-801 (Sheet 9 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H12359 S0006574761_V3

Main Landing Gear Trunnion Pin Puller Equipment
Figure 402/32-11-00-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 REMOVABLE PARTS TO SUPPORT MLG INSTALLATION.
NOT NEEDED DURING MLG REMOVAL.

H12367 S0006574762_V6

Main Landing Gear Support Equipment
Figure 403/32-11-00-990-804 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 REMOVABLE PARTS TO SUPPORT MLG INSTALLATION. NOT NEEDED DURING MLG REMOVAL

3034079 S0000804187_V1

Main Landing Gear Support Equipment
Figure 403/32-11-00-990-804 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Clearance Requirements
Figure 404/32-11-00-990-806

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F84899 S0006561283_V4

Main Landing Gear Shock Strut Servicing Chart
Figure 405/32-11-00-990-809

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-00-400-801

3. Main Landing Gear Installation

(Figure 401, Figure 402, Figure 403, Figure 404, and Figure 405)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
12-15-31-610-805	Main Landing Gear Strut Servicing, Airplane on Jacks (P/B 301)
12-21-11-640-801	Main Landing Gear Upper End Components Servicing (P/B 301)
12-21-11-640-802	Main Landing Gear Lower End Components Servicing (P/B 301)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
20-10-52-400-801	Flexible Hose Installation (P/B 401)
27-51-00-040-801	Trailing Edge Flap System Deactivation (P/B 201)
27-51-00-440-801	Trailing Edge Flap System Reactivation (P/B 201)
27-51-00-860-804	Retract the Trailing Edge Flaps (P/B 201)
27-62-00-800-801	Speed Brake Hydraulic Systems A and B Pressurization (P/B 201)
27-62-00-840-801	Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization (P/B 201)
27-62-51-400-801	Ground Spoiler Interlock Valve Cable Installation (P/B 401)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-61-400-802	Main Landing Gear Lower Side Strut Installation (P/B 401)
32-11-81-870-801	Hydraulic Shimmy Damper - Bleeding (P/B 401)
32-11-83-000-801	Main Landing Gear Forward Trunnion Bearing Assembly Removal (P/B 401)
32-11-83-400-801	Main Landing Gear Forward Trunnion Bearing Assembly Installation (P/B 401)
32-13-11-420-802	Main Landing Gear Center Door Installation (P/B 401)
32-13-11-420-803	Main Landing Gear Door Assembly Installation (P/B 401)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)
32-13-11-990-801	Figure: Main Landing Gear Shock Strut Doors Installation (P/B 401)
32-13-21-000-801	Main Landing Gear Wing Door Adjustment (P/B 501)
32-13-21-420-801	Main Landing Gear Wing Door Installation (P/B 401)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)
32-34-00-730-801	Main Gear Manual Extension System Test - Airplane on Jacks (P/B 501)
32-41-00-870-802	Normal (System B) Hydraulic Brake System - Bleeding (P/B 201)

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(Continued)

Reference	Title
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)
32-42-00-710-802	Transducer Operational Test (P/B 501)
32-42-00-720-803	Antiskid Valve Operational Test (P/B 501)
32-45-11-400-801	Main Landing Gear Wheel and Tire Assembly Installation (P/B 401)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-15434	OMNI ARM Aircraft Maintenance Fixture Part #: NB-800 Supplier: 1T0V3 Opt Part #: NBH Supplier: 1T0V3
SPL-1362	Wrench Adapter, C32029-6 or C32029-96 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1363	Wrench Adapter, C32029-7 or C32029-98 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1365	Thread Protector, C32029-9 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1366	Thread Protector, C32029-10 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1371	Thread Protector, C32029-15 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1372	Thread Protector, C32029-16 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
I SPL-1521	Strut Inflation Tool - Landing Gear Part #: F70200-35 Supplier: 81205 Opt Part #: F70200-1 Supplier: 81205 Opt Part #: F70200-14 Supplier: 81205 Opt Part #: F70200-17 Supplier: 81205 Opt Part #: F70200-18 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
SPL-1744	Lock Set - Inboard Ground Spoiler Actuator (Contains 4 Lock Assemblies) Part #: C27046-13 Supplier: 81205 Opt Part #: C27046-1 Supplier: 81205
SPL-1862	Removal/Installation Equipment - Pin, Aft Trunnion MLG Part #: C32031-22 Supplier: 81205 Opt Part #: C32031-1 Supplier: 81205
SPL-1869	Removal/Installation Equipment - Main Landing Gear Part #: C32034-343 Supplier: 81205 Opt Part #: C32034-227 Supplier: 81205 Opt Part #: C32034-273 Supplier: 81205 Opt Part #: C32034-339 Supplier: 81205
SPL-1871	Retention Straps - Shock Strut, NLG/MLG Part #: C32030 -31 Supplier: 81205 Opt Part #: C32030-10 Supplier: 81205
SPL-14021	Wrench Adapter, C32029-48 or C32029-90 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-14022	Wrench Adapter, C32029-49 or C32029-88 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-14023	Wrench Adapter, C32029-50 or C32029-89 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-14024	Thread Protector , C32029-51 (included in C32029 Kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G00018	Nitrogen - Gaseous, Pressurizing, 99.5 Percent Pure	A-A-59503 Type I Grade B, MIL-PRF-27401 Type I Grade A
G02166	Lockwire - MS20995NC20, Monel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G02314	Air - Compressed, Breathing	BB-A-1034 Source I Grade A
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
20	Pin	32-11-00-02-010	LOM ALL
24	Pin	32-11-00-02-070	LOM ALL

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(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
41	Cotter pin	32-11-61-03-010	LOM ALL
56	Cotter pin	32-32-11-01-010	LOM ALL
57	Cotter pin	32-32-93-01-030	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Access Panels

Number	Name/Location
551BB	Lower Inboard Fixed Trailing Edge, Gear Adjustment Door
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551CB	Lower Inboard Fixed Trailing Edge, Gear Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651BB	Lower Inboard Fixed Trailing Edge, Gear Door Adjustment
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651CB	Lower Inboard Fixed Trailing Edge, Gear Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

G. Prepare for the Installation

NOTE: Omni Arm Tool maintenance fixture, COM-15434, can be used as an alternate to Dolly Assembly R/I equipment, SPL-1869. This procedure provides instructions to remove and install the main landing gear with the Dolly Assembly. Refer to manufacturers instructions for use of the Omni Arm Tool.

SUBTASK 32-11-00-480-015

CAUTION MAKE SURE THAT THE FORWARD TRUNNION BEARING PIN DOES NOT MOVE ON THE PROTECTOR ASSEMBLY DURING THE REMOVAL OR INSTALLATION OF THE MAIN LANDING GEAR. IF THIS CONDITION OCCURS, IT CAN CAUSE DAMAGE TO THE PIN.

(1) If the protector assembly [92] (C32034-228/-235) from R/I equipment, SPL-1869, is not already installed, do the steps that follow:

NOTE: The protector assembly [92] will prevent damage to the forward trunnion bearing pin [29] during the installation of the main landing gear [93].

NOTE: For more protection of the transition radius of the forward trunnion bearing pin [29], you can apply tape around the pin before gear installation. The tape should be removed after installation.

LOM 404, 411, 416, 420, 422, 425 PRE SB 737-32-1448

NOTE: The retaining ring, the support ring assembly, and forward trunnion seal should be attached on the forward trunnion bearing pin before the forward trunnion is connected.

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LOM 402, 406, 407, 412, 415, 423, 424, 426-434, 437-447, 450-999; LOM 404, 411, 416, 420, 422, 425 POST SB 737-32-1448

NOTE: The retaining ring and seal should be attached on the forward trunnion bearing pin before the forward trunnion is connected.

LOM ALL

(a) Put the upper end of the protector assembly [92] (C32034-228/-235) in the large clearance between the forward trunnion bearing pin [29] and housing assembly.

(b) Attach the lower end of the protector assembly [92] (C32034-228/-235) over the bottom of the housing assembly, such that you hear a click when you attach it.

SUBTASK 32-11-00-200-005

(2) Make sure that the main landing gear center door has the fully captured clip assemblies for bolt retention installed (Figure 32-13-11-990-801, TASK 32-13-11-420-802).

SUBTASK 32-11-00-480-016

(3) Install the retention strap, SPL-1871, with the marker facing up, to hold the shock strut [1] in its compressed position.

NOTE: Two straps are required to hold the inner cylinder secure.

SUBTASK 32-11-00-640-001

(4) Make sure that the aft trunnion pin [19] can easily move.

(a) If you cannot easily move the aft trunnion pin [19], remove it from the aft trunnion and lubricate it with grease, D00633.

(b) Put the aft trunnion pin [19] into the aft trunnion.

SUBTASK 32-11-00-480-017

(5) Use tie wraps to hold the aft trunnion pin [19] inside the aft trunnion.

NOTE: This will prevent the aft trunnion pin from falling out of the outer cylinder trunnion when you do the subsequent steps.

SUBTASK 32-11-00-950-001

(6) Put protective tape on the outer edge of the aft trunnion to protect its surface finish from scratching.

SUBTASK 32-11-00-860-007

(7) Do this task: Trailing Edge Flap System Deactivation, TASK 27-51-00-040-801.

H. Main Landing Gear Installation

SUBTASK 32-11-00-480-018

(1) Attach the support assembly [96] and side strut attach assembly [94] to the main landing gear [93].

NOTE: A minimum of two persons are necessary to do this task.

(a) Make sure that the side strut attach assembly [94] is not attached to the support assembly [96].

(b) Make sure that the jackball pin is removed from the hole in the jackball fitting of the support assembly [96].

(c) Put the side strut attach assembly [94] into the lower side strut attach point on the main landing gear [93], and such that the stenciled plate is in the vertical position.

1) Install the washer on the threaded end of the side strut attach assembly [94].

2) Make sure that the stenciled plate is still in a vertical position and install the nut finger tight.

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(d) Put the support assembly [96] in its position on the aft side of the main landing gear [93].

1) Make sure that the jackball fitting on the support assembly [96] is fully engaged on the jacking ball of the main landing gear.

(e) If it is necessary, align the holes for the installation of the jackball pin.

(f) Put the jackball pin through the jackball fitting of the support assembly [96] and jacking ball of the main landing gear [93].

(g) Install the lynch pin in the jackball pin.

(h) Loosen the nut that holds the side strut attach assembly [94], such that the stenciled plate can be attached to the studs on the side strut support assembly [97].

1) If it is necessary, adjust the adjustable square support tube of the side strut support assembly [97].

(i) Tighten the two hand knobs to hold the stenciled plate to the studs on the side strut support assembly [97].

(j) Tighten the nut that holds the side strut attach assembly [94] to the lower side strut attach point.

(k) Tighten the two adjustable handles to hold the adjustable square support tube of the side strut support assembly [97].

SUBTASK 32-11-00-480-019

(2) Attach the dolly assembly [98] to the support assembly [96].

NOTE: A minimum of two persons are necessary to do this task.

(a) Put the dolly assembly [98] in its position such that the boom arm [91] is on the forward side of the main landing gear [93] and legs are in center with the main landing gear [93].

(b) Use the manual valve on the hydraulic pump to lift or lower the boom arm [91] until you can connect the lift link [95] to the support assembly [96].

(c) Connect the lift link [95] to the support assembly [96].

(d) Install the pins to hold the lift link [95] to the support assembly [96].

(e) Connect the winch assembly [99] to the support assembly [96] with the snapper pin.

SUBTASK 32-11-00-480-020

(3) Make sure that the airplane is lifted with the jacks and lower surface of the housing, for the forward trunnion bearing pin [29], measures 97 ±2 in. (246 ±5 cm) above the ground (TASK 07-11-01-580-815) (View B-B, Figure 401).

(a) Make sure that to keep the airplane level.

SUBTASK 32-11-00-580-003

(4) Use the boom arm [91] to lift the main landing gear [93], such that the transportation support assembly and aft tire support assembly can be removed from the dolly assembly [98].

SUBTASK 32-11-00-980-001

(5) From the aft side, carefully move the dolly assembly [98] with main landing gear [93] forward below the wing and put it in its position below the wheel well area.

(a) Move the dolly assembly [98] such that the axis of the forward trunnion bearing pin [29] will be perpendicular to the housing assembly and rear spar.

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SUBTASK 32-11-00-020-027

WARNING	MAKE SURE THAT THE HYDRAULIC PRESSURE IS BELOW 5000 PSIG (34,474 KPA). IF YOU CONTINUE WHEN THE HYDRAULIC PRESSURE IS 5000 (34,474 KPA) OR HIGHER, A BINDING CONDITION WILL OCCUR. A BINDING CONDITION CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) Do these steps to connect the forward trunnion:

(a) Lift the main landing gear [93] with the boom arm [91] and winch assembly [99], such that the forward trunnion and forward trunnion bearing pin [29] are aligned.

1) Remove the transportation support assembly and aft tire support assembly from the dolly assembly [98].

(b) Attach the outer cylinder strap assembly to the hoist ring on the end of the boom arm [91] and around the outer cylinder at the aft trunnion.

(c) Remove the tension from the strap.

(d) Use the pry lever bar to remove the load off of the caster wheels one at a time.

(e) Use the lever bar assemblies to turn all the caster wheels parallel to the dolly assembly [98] legs, such that the forward trunnion can be inserted straight onto the forward trunnion bearing pin [29].

1) Make sure that the swivel locks on the caster wheels are not locked.

(f) Make sure that the forward trunnion stays aligned with the forward trunnion bearing pin [29] and lock the swivel locks.

(g) Put chocks on all caster wheels but put the forward chock approximately 2 in. (5 cm) forward of the double wheel caster.

(h) Put the fork end of the lever bar assemblies on the rectangular tubing above the single wheel casters.

(i) Use the lever bar assemblies to slowly push the dolly assembly [98] forward.

1) Make sure that the aft trunnion will clear the lower trailing edge panel seals.

2) Make sure that the chocks are in contact with the single wheel casters to prevent the movement of the dolly assembly [98].

(j) Slowly lift the aft end of the main landing gear [93] with the winch assembly [99] and lifting the boom arm [91] at the same time while you continue to push the dolly assembly [98] forward.

1) Use the manual valve on the hydraulic pump to lift the boom arm [91].

2) If it is necessary, tighten the outer cylinder strap to remove the tension, such that the forward trunnion will not come off of the forward trunnion bearing pin [29].

(k) Continue the movement of the dolly assembly [98] until the forward trunnion is fully inserted onto the forward trunnion bearing pin [29].

SUBTASK 32-11-00-210-004

(7) Visually examine the protective coating on the transition radius of the forward trunnion pin for chipping, cracks, or corrosion.

(a) If the transition radius is damaged, replace the trunnion pin, do these tasks:

- Main Landing Gear Forward Trunnion Bearing Assembly Removal, TASK 32-11-83-000-801

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- Main Landing Gear Forward Trunnion Bearing Assembly Installation, TASK 32-11-83-400-801.

SUBTASK 32-11-00-620-004

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(8) Apply a thin layer of Cor-Ban 27L Compound, G50237, to these items:

(a) The shank, thread, and thread relief of the forward trunnion cross bolt [28]

(b) The thread of the nut [25]

(c) The spline and face of the washer [26]

(d) The new pin [24].

SUBTASK 32-11-00-160-005

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(9) Remove all unwanted Cor-Ban 27L Compound, G50237.

SUBTASK 32-11-00-420-029

(10) Do these steps to install the forward trunnion cross bolt [28]:

(a) Install the thread protector, C32029-9, SPL-1365, or thread protector, C32029-51, SPL-14024, on the forward trunnion cross bolt [28].

(b) Put the forward trunnion cross bolt [28] through the door actuator bracket [27], forward trunnion, and forward trunnion bearing pin [29].

(c) Remove the thread protector, C32029-9, SPL-1365, or thread protector, C32029-51, SPL-14024, from the forward trunnion cross bolt [28].

(d) Install the washer [26] and nut [25] on the forward trunnion cross bolt [28].

(e) Tighten the nut [25] to 21 ft-lb (28.47 N·m) - 25 ft-lb (33.90 N·m).

1) Use the wrench adapter, C32029-49 or C32029-88, SPL-14022, or wrench adapter, C32029-50 or C32029-89, SPL-14023, to hold the head of the forward trunnion cross bolt [28].

(f) Install the pin [24] in the forward trunnion cross bolt [28].

(g) If it is necessary, loosen the nut [25] to the nearest castellation to align the holes for the pin [24].

(h) Do a check of the nut [117], on the door actuator bracket [27], to make sure that it is not loose.

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1) If the nut [117] is loose, tighten it.

SUBTASK 32-11-00-080-011

(11) Remove the outer cylinder strap assembly from the hoist ring and outer cylinder.

SUBTASK 32-11-00-420-022

WARNING	MAKE SURE THAT THE HYDRAULIC PRESSURE IS BELOW 5000 PSIG (34,474 KPA). IF YOU CONTINUE WHEN THE HYDRAULIC PRESSURE IS 5000 (34,474 KPA) OR HIGHER, A BINDING CONDITION WILL OCCUR. A BINDING CONDITION CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(12) Operate the dolly assembly [98] to put the aft trunnion in its position.

NOTE: The main landing gear [93] installation path is done with the forward trunnion bearing pin [29] attached to the forward trunnion. This installation path is a combination of moving the aft trunnion inboard, lifting the aft trunnion, and moving the aft trunnion outboard as the main landing gear pivots about the forward trunnion bearing pin [29].

(a) Make sure to lock the caster wheels when the main landing gear [93] pivots about the forward trunnion bearing pin [29] as follows:

1) Use the pry lever bar to remove the load off of the caster wheels one at a time.

2) Lock the single wheel casters perpendicular to the forward trunnion pivot axis approximately 38 degrees, and 90 degrees for the double wheel caster.

(b) Put the fork end of the lever bar assemblies on the rectangular tubing above the single wheel casters.

(c) Do a check to make sure that the locks for the caster wheels are released.

(d) Hold the lever bar assemblies to slowly push the aft end of the dolly assembly [98] inboard, such that the aft trunnion will clear the main landing gear beam lower flange, lower trailing edge panel seals, and seal support beam when the aft trunnion is lifted.

(e) If it is necessary, use the lever bar assemblies and pry lever bar to put the caster wheels parallel to the legs of the dolly assembly [98].

(f) Lock the caster wheels.

(g) Lift and move the aft trunnion outboard at the same time while you clear the main landing gear [93] from the main landing gear beam as follows:

1) Release the tension on the winch assembly [99].

2) Use the manual valve on the hydraulic pump to lift the boom arm [91].

(h) Put the aft trunnion in its position directly below the aft trunnion bearing.

1) If the forward tire support assembly is on the way of the tires, remove it.

(i) Put chocks on all the casters.

(j) Continue to slowly lift the aft trunnion of the main landing gear [93] until the aft trunnion and aft trunnion bearing are aligned.

1) Make sure that the chock is in contact with the double wheel caster to prevent the forward movement of the dolly assembly [98].

SUBTASK 32-11-00-080-006

(13) Remove the two tie wraps that hold the aft trunnion pin [19].

SUBTASK 32-11-00-080-007

(14) Remove the protective tape from the outer edge of the aft trunnion.

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SUBTASK 32-11-00-640-002

(15) Lubricate the chrome plated surfaces of the aft trunnion pin [19] with grease, D00633.

SUBTASK 32-11-00-160-001

(16) Remove all unwanted grease, D00633.

SUBTASK 32-11-00-620-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(17) Apply a thin layer of Cor-Ban 27L Compound, G50237, to these items:

(a) The shank, thread, and thread relief of the aft trunnion cross bolt [23]

(b) The thread of the nut [21]

(c) The spline and face of the washer [22]

(d) The new pin [20].

SUBTASK 32-11-00-160-002

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(18) Remove all unwanted Cor-Ban 27L Compound, G50237.

SUBTASK 32-11-00-420-007

WARNING	MAKE SURE THAT THE HYDRAULIC PRESSURE IS BELOW 5000 PSIG (34,474 KPA). IF YOU CONTINUE WHEN THE HYDRAULIC PRESSURE IS 5000 (34,474 KPA) OR HIGHER, A BINDING CONDITION WILL OCCUR. A BINDING CONDITION CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(19) Connect the aft trunnion.

(a) Put a flashlight, or other bright lights, at the top of the main landing gear [93] and shine them back past the aft trunnion.

(b) Look through the aft trunnion pin access hole so you can see the aft trunnion pin [19] through the aft trunnion bearing.

(c) Move the dolly assembly [98] from side to side or lift and lower it until you can see equal amounts of light all the way around the aft trunnion pin [19] through the aft trunnion bearing.

NOTE: When you have the aft trunnion pin [19] and aft trunnion bearing correctly aligned, the aft trunnion pin will install very easily.

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(d) Use the aft trunnion pin R/I equipment, SPL-1862, to pull the aft trunnion pin [19] from the aft trunnion.

1) Put the pull adapter [74] through the pin access hole in the main landing gear beam assembly.

2) Attach the pull adapter [74] and pull nut [73] to the aft trunnion pin [19].

3) Pull the slide hammer [72] until the aft trunnion pin [19] is out of the aft trunnion bearing such that the aft trunnion will connect to the main landing gear beam assembly.

(e) Move the aft trunnion bearing until it is in line with the aft trunnion pin [19].

(f) If it is necessary, use the aft trunnion pin R/I equipment, SPL-1862, to turn the aft trunnion pin [19] clockwise until the holes for the aft trunnion cross bolt [23] are aligned.

(g) Install the thread protector, C32029-10, SPL-1366, on the aft trunnion cross bolt [23].

(h) Put the aft trunnion cross bolt [23] through the aft trunnion and aft trunnion pin [19].

(i) Remove the thread protector, C32029-10, SPL-1366, from the aft trunnion cross bolt [23].

(j) Install the washer [22] and nut [21] on the aft trunnion cross bolt [23].

(k) Tighten the nut [21] to 160 in-lb (18.08 N·m) - 190 in-lb (21.47 N·m).

NOTE: You can use long wrench with narrow body, ratchet wrench or crowfoot with 4 inches extension to tighten the nut.

1) Use the wrench adapter, C32029-48 or C32029-90, SPL-14021, to hold the head of the aft trunnion cross bolt [23].

(l) Install the pin [20] in the aft trunnion cross bolt [23].

(m) If it is necessary, loosen the nut [21] to the nearest castellation to align the holes for the pin [20].

SUBTASK 32-11-00-080-004

(20) Remove the main landing gear R/I equipment, SPL-1869, from the main landing gear [93].

SUBTASK 32-11-00-080-008

(21) Remove the protector assembly.

SUBTASK 32-11-00-210-005

(22) Visually examine the protective coating on the transition radius of the forward trunnion pin for chipping, cracks, or corrosion.

(a) If the transition radius is damaged, replace the trunnion pin, do these tasks:

- Main Landing Gear Forward Trunnion Bearing Assembly Removal, TASK 32-11-83-000-801
- Main Landing Gear Forward Trunnion Bearing Assembly Installation, TASK 32-11-83-400-801.

SUBTASK 32-11-00-080-009

(23) Remove retention strap, SPL-1871, from the main landing gear [93].

SUBTASK 32-11-00-212-001

(24) Before you connect the electrical connector, examine the connector for corrosion.

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WARNING

DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was a corrosion, refer to SWPM 20-60-03 to correct the problem.

(b) Apply the D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

SUBTASK 32-11-00-420-008

(25) Do these steps to connect the electrical connector [13]:

(a) Attach the two clamps [16] to the electrical connector [13].

(b) Install the two screws [14], two washers [15], and two nuts [17] to the two clamps [16] that hold the electrical connector [13] to the hose guide [18].

(c) Remove the cap from the electrical connector [13].

(d) Connect the electrical connector [13] to the electrical connector.

(e) Install MS20995NC20 lockwire, G02166, on the electrical connector [13] (TASK 20-10-44-400-801).

SUBTASK 32-11-00-420-009

(26) Do these steps to connect the electrical connector [11]:

(a) Put the electrical connector [11] through the hose guide [12].

(b) Attach the two clamps [9] to the electrical connector [11].

(c) Install the two screws [7], two washers [8], and two nuts [10] to the two clamps [9] that hold the electrical connector [11] to the structure.

(d) Remove the cap from the electrical connector [11].

(e) Connect the electrical connector [11] to the electrical connector.

(f) Install MS20995NC20 lockwire, G02166, on the electrical connector [11] (TASK 20-10-44-400-801).

SUBTASK 32-11-00-420-010

(27) Do these steps to connect the brake hose assembly [6] and hydraulic return shimmy damper line [114] (TASK 20-10-52-400-801):

(a) Remove the caps from the brake hose assembly [6] and hydraulic return shimmy damper line [114].

(b) Remove the caps from the elbow [5].

(c) Connect the brake hose assembly [6] and hydraulic return shimmy damper line [114] to the elbow [5].

(d) Remove the tags from the brake hose assembly [6] and hydraulic return shimmy damper line [114].

SUBTASK 32-11-00-100-001

(28) Clean the surfaces of these items that will attach the retract actuator [43] to the main gear trunnion:

(a) Attachment fitting on the main gear trunnion

(b) actuator attach pin [50]

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(c) spacers [49]

(d) washers [48]

(e) nut [45]

(f) cotter pin [56], nut [47], washer [46], and bolt [44].

SUBTASK 32-11-00-100-002

(29) Clean the surfaces of these items that will attach the walking beam [51] to the main gear trunnion:

(a) Attachment fitting on the main gear trunnion

(b) walking beam attach pin [52]

(c) washer [53]

(d) nut [55]

(e) cotter pin [57], nut [47], washer [46], and bolt [54].

SUBTASK 32-11-00-600-001

(30) Apply grease, D00633, to the chrome-plated surfaces of the reaction link pin [32], actuator attach pin [50], and walking beam attach pin [52].

SUBTASK 32-11-00-620-002

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(31) Apply a thin layer of Cor-Ban 27L Compound, G50237, to these items:

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces.

(a) The threads and thread reliefs on the actuator attach pin [50] and walking beam attach pin [52].

(b) The threads and thread reliefs of the bolt [44] and bolt [54].

(c) The threads and thread reliefs of the nut [45], nut [47], and nut [55].

(d) The faces of the washer [46], washer [48], and washer [53].

(e) The cotter pin [41], cotter pin [56], and cotter pin [57].

SUBTASK 32-11-00-160-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(32) Remove all unwanted Cor-Ban 27L Compound, G50237.

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SUBTASK 32-11-00-080-010

(33) Remove the rope that holds the disconnected ends of the walking beam [51] and retract actuator [43].

SUBTASK 32-11-00-010-005

(34) Remove the clamps for the electrical conduit on the inboard side of the nut [45] and move the conduit to get clearance to tighten the nut [45].

SUBTASK 32-11-00-420-024

(35) Do these steps to connect the retract actuator [43] to the main gear trunnion:

(a) Put the retract actuator [43] in its position for connection to the main gear trunnion.

(b) Install the thread protector, C32029-16, SPL-1372, on the actuator attach pin [50].

(c) Put the actuator attach pin [50] through the retract actuator [43], spacers [49] and main gear trunnion.

(d) Remove the thread protector, C32029-16, SPL-1372, from the actuator attach pin [50].

(e) Install the washer [48] and nut [45] on the actuator attach pin [50].

(f) Use the wrench adapter, C32029-7 or C32029-98, SPL-1363, to hold the head of the actuator attach pin [50].

(g) Tighten the nut [45] to 50 ft-lb (67.79 N·m) - 75 ft-lb (101.69 N·m).

(h) If it is necessary, loosen the nut [45] to the nearest castellation to align the holes for the bolt [44].

(i) Remove the wrench adapter, C32029-7 or C32029-98, SPL-1363, from the actuator attach pin [50].

(j) Put the bolt [44] through the actuator attach pin [50].

(k) Install the washer [46] and nut [47] on the actuator attach pin [50].

(l) Tighten the nut [47] to 45 in-lb (5.08 N·m) - 55 in-lb (6.21 N·m).

(m) If it is necessary, loosen the nut [47] to the nearest castellation to align the holes for the cotter pin [56].

(n) Install the new cotter pin [56] in the bolt [44].

SUBTASK 32-11-00-410-003

(36) Put the electrical conduit back in its position and install the clamps.

SUBTASK 32-11-00-420-025

(37) Do these steps to connect the walking beam [51] to the main gear trunnion:

(a) Put the walking beam [51] in its position for the connection to the main gear trunnion.

(b) Install the thread protector, C32029-15, SPL-1371, on the walking beam attach pin [52].

(c) Put the walking beam attach pin [52] through the walking beam [51], and main gear trunnion.

(d) Remove the thread protector, C32029-15, SPL-1371, from the walking beam attach pin [52].

(e) Install the washer [53] and nut [55] on the walking beam attach pin [52].

(f) Install the wrench adapter, C32029-6 or C32029-96, SPL-1362, to hold the head of the walking beam attach pin [52].

(g) Tighten the nut [55] to 50 ft-lb (67.79 N·m) - 75 ft-lb (101.69 N·m).

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(h) If it is necessary, loosen the nut [55] to the nearest castellation to align the holes for the bolt [54].

(i) Remove the wrench adapter, C32029-6 or C32029-96, SPL-1362, from the walking beam attach pin [52].

(j) Put the bolt [54] through the walking beam attach pin [52].

(k) Install the washer [46] and nut [47] on the walking beam attach pin [52].

(l) Tighten the nut [47] to 45 in-lb (5.08 N·m) - 55 in-lb (6.21 N·m).

(m) If it is necessary, loosen the nut [47] to the nearest castellation to align the holes for the cotter pin [57].

(n) Install the new cotter pin [57] in the bolt [54].

SUBTASK 32-11-00-420-026

(38) Install the nuts [37], washers [35], washers [36], and bolts [34] to connect the turnbuckle [38] to the bracket.

SUBTASK 32-11-00-620-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(39) Apply a thin layer of the Cor-Ban 27L Compound, G50237, to these items:

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces.

(a) The threads and thread reliefs of the crossbolt [31]

(b) The threads of the nut [40]

(c) The faces of the washer [39].

SUBTASK 32-11-00-640-003

(40) Apply grease, D00633, to the chrome plated surfaces of the reaction link pin [32] and end cap [42].

SUBTASK 32-11-00-160-004

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(41) Remove all unwanted Cor-Ban 27L Compound, G50237, and grease, D00633.

SUBTASK 32-11-00-420-027

(42) Do these steps to connect the reaction link assembly [30] to the trunnion [33]:

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(a) Put the outboard end of the reaction link assembly [30] in its position for attachment to the trunnion [33].

(b) Put the reaction link pin [32] through the reaction link assembly [30] and trunnion [33].

(c) Install the end cap [42] on the reaction link pin [32].

(d) Put the crossbolt [31] through the reaction link pin [32] and end cap [42].

(e) Install the washer [39] and nut [40] on the crossbolt [31].

(f) Tighten the nut [40] to 20 in-lb (2 N·m) - 24 in-lb (3 N·m).

(g) If it is necessary, loosen the nut [40] to the nearest castellation to align the holes for the cotter pin [41].

(h) Install the new cotter pin [41] in the crossbolt [31].

SUBTASK 32-11-00-420-019

(43) Do this task: Main Landing Gear Lower Side Strut Installation, TASK 32-11-61-400-802.

CAUTION

MAKE SURE THAT THE HEAD OF THE BOLT POINTS IN THE AFT DIRECTION. IF THE HEAD OF THE BOLT POINTS FORWARD, DAMAGE TO COMPONENTS AND THE AIRPLANE STRUCTURE WILL OCCUR.

(a) For the bolt that connects the lower side strut to the upper side strut, make sure that the bolt head points in the aft direction.

SUBTASK 32-11-00-200-001

WARNING

MAKE SURE THAT THE SYSTEM-TO-SYSTEM SEPARATIONS ARE CORRECT. SEPARATIONS THAT ARE NOT CORRECT COULD CAUSE UNWANTED CONDITIONS, WHICH COULD INCLUDE CHAFING, FIRE OR ELECTROMAGNETIC INTERFERENCE. THIS CAN CAUSE INJURIES TO PERSONNEL, OR CAN MAKE FLIGHT DANGEROUS, OR CAN CAUSE DAMAGE TO THE SYSTEMS.

(44) Make sure that there is a minimum distance of 0.13 in. (3.30 mm) between the wire bundles [111] and hangar link [112] (Figure 404).

SUBTASK 32-11-00-420-020

(45) Install the hose guide [18].

SUBTASK 32-11-00-410-002

(46) Install the applicable panel:

(a) For the left wing, do this step:

Close this access panel:

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel

(b) For the right wing, do this step:

Close this access panel:

Number	Name/Location
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel

SUBTASK 32-11-00-420-031

(47) If you will install the right gear, connect the interlock valve cable of the ground spoiler (TASK 27-62-51-400-801).

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SUBTASK 32-11-00-420-013

(48) Do this task: Main Landing Gear Wing Door Installation, TASK 32-13-21-420-801.

SUBTASK 32-11-00-420-028

(49) Do this task: Main Landing Gear Door Assembly Installation, TASK 32-13-11-420-803.

SUBTASK 32-11-00-420-032

(50) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

SUBTASK 32-11-00-420-033

(51) Do this task: Main Landing Gear Wheel and Tire Assembly Installation, TASK 32-45-11-400-801.

SUBTASK 32-11-00-410-001

(52) Install the applicable panel:

(a) For the left landing gear, do this step:

Close these access panels:

Number	Name/Location
551BB	Lower Inboard Fixed Trailing Edge, Gear Adjustment Door
551CB	Lower Inboard Fixed Trailing Edge, Gear Access Panel

(b) For the right landing gear, do this step:

Close these access panels:

Number	Name/Location
651BB	Lower Inboard Fixed Trailing Edge, Gear Door Adjustment
651CB	Lower Inboard Fixed Trailing Edge, Gear Access Panel

(c) Close these access panels:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-00-080-013

(1) Remove the ground spoiler actuator lock lock set, SPL-1744.

SUBTASK 32-11-00-860-015

(2) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
B	16	C01346	LANDING GEAR PARKING BRAKE
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY

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(Continued)

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-11-00-860-039

(3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
E	4	C00700	HEATERS DRAIN MAST AIR

SUBTASK 32-11-00-860-009

(4) Do this task: Trailing Edge Flap System Reactivation, TASK 27-51-00-440-801.

SUBTASK 32-11-00-860-010

(5) Do this task: Retract the Trailing Edge Flaps, TASK 27-51-00-860-804.

SUBTASK 32-11-00-860-020

WARNING

MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, TASK 27-62-00-800-801.

SUBTASK 32-11-00-860-021

(7) Move the speed brake lever to the DOWN position to lower the spoilers.

SUBTASK 32-11-00-860-032

(8) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, TASK 27-62-00-840-801.

SUBTASK 32-11-00-820-001

(9) If you changed the length of one or more of the door rods, do the steps that follows:

NOTE: No adjustment to the doors is necessary if the door rods were not changed.

(a) Adjust the shock strut doors of the main landing gear (TASK 32-13-11-820-801).

(b) Adjust the outer door of the main landing gear (TASK 32-13-21-000-801).

SUBTASK 32-11-00-610-001

(10) Lubricate the main landing gear, do these tasks:

- Main Landing Gear Upper End Components Servicing, TASK 12-21-11-640-801
- Main Landing Gear Lower End Components Servicing, TASK 12-21-11-640-802.

SUBTASK 32-11-00-619-001

(11) To fully service the shock strut with the airplane on jacks, do these steps to service the shock strut with fluid:

NOTE: Hold the shock strut in a vertical position to do these steps.

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(a) Make sure that the shock strut is fully deflated, refer to service placard for the fully deflated dimension (Figure 405).

(b) Fill the shock strut with fluid (TASK 12-15-31-610-805).

(c) Close the valves and install their caps.

SUBTASK 32-11-00-619-002

(12) To inflate the shock strut with the airplane on jacks, do these steps:

NOTE: To do these steps, you must have accomplished the steps to add fluid to the strut, at the start of this task.

(a) Install the inflation tool, SPL-1521, on the gas valve.

(b) Inflate the shock strut with nitrogen, G00018, until you reach the fully extended pressure, refer to the servicing placard for the correct pressure (Figure 405).

NOTE: If nitrogen is not available, you can use air, G02314, as an alternative, to inflate the shock strut.

(c) Remove the inflation tool, SPL-1521, and install the cap on the gas valve.

SUBTASK 32-11-00-619-003

(13) If you did not service the strut with fluid, at the start of this task, do this task: Main Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-31-610-802.

SUBTASK 32-11-00-080-002

(14) If the downlock pins are installed on all the landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-11-00-710-002

(15) Do this task: Main Landing Gear Operational Test, TASK 32-32-00-710-801.

NOTE: It is optional to perform the main landing gear test - component replacement, instead of the operational test if a hydraulic cart is not available (TASK 32-32-00-710-802).

SUBTASK 32-11-00-710-003

(16) Do this task: Main Gear Manual Extension System Test - Airplane on Jacks, TASK 32-34-00-730-801.

SUBTASK 32-11-00-480-003

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(17) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-00-580-001

(18) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-11-00-860-011

(19) For hydraulic systems A and B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-11-00-870-001

(20) Bleed the brake hydraulic system, do this task: Normal (System B) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-802.

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SUBTASK 32-11-00-790-001

(21) Examine the connections of the hydraulic brake line for leakage.

SUBTASK 32-11-00-870-003

(22) Bleed the shimmy damper, do this task: Hydraulic Shimmy Damper - Bleeding, TASK 32-11-81-870-801.

SUBTASK 32-11-00-790-002

(23) Examine the connections of the shimmy damper for leakage.

SUBTASK 32-11-00-710-004

(24) Do this task: Antiskid Valve Operational Test, TASK 32-42-00-720-803.

SUBTASK 32-11-00-710-001

(25) Do a test of the operation of the antiskid transducer (TASK 32-42-00-710-802).

SUBTASK 32-11-00-610-002

(26) Check the pressure and extension of the shock strut [1].

(a) Measure the pressure and extension of the shock strut [1].

(b) Make sure that the pressure you measure is still correct for the extension of the shock strut [1] (Figure 405).

(c) If the pressure is not correct for the extension of the shock strut [1], then the shock strut [1] does not have the proper amount of fluid and you must fully service the shock strut [1] (TASK 12-15-31-610-802).

END OF TASK

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MAIN LANDING GEAR - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure contains the task to examine the main landing gear.

TASK 32-11-00-200-801

2. Main Landing Gear Inspection

(Figure 601)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task provides the regular inspection of the main landing gear.

NOTE: This inspection can be done with the airplane on the ground or on jacks.

(2) Refer to TIME LIMITS/MAINTENANCE CHECKS, CHAPTER 05 for special inspection procedure on the following conditions:

(a) After a hard or overweight landing

(b) After a brake seizure when you tow the airplane, or the airplane is moving at high speed on the ground

(c) After the gear has collided with an obstacle

(d) After a high energy stop.

B. References

Reference	Title
05	TIME LIMITS/MAINTENANCE CHECKS
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-00-10-211-801	Landing Gear Inner Cylinder Chrome Inspection (P/B 601)
32-11-21-200-801	Main Landing Gear Shock Strut Seal Leakage Check (P/B 801)
32-45-00-700-801	Wheels Fast Check (Wheel Installed on the Airplane) (P/B 601)
32-45-00-700-803	Tires - Inspection (P/B 601)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Access Panels

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

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E. Prepare for the Inspection

SUBTASK 32-11-00-480-004

> **WARNING** OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-00-480-005

(2) Put chocks around the tires of all the landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-11-00-010-006

(3) Remove the applicable access panel:

(a) For the left landing gear, do this step:

Open this access panel:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

(b) For the right landing gear, do this step:

Open this access panel:

Number	Name/Location
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

F. Procedure

SUBTASK 32-11-00-210-001

(1) Examine the upper components of the main landing gear:

(a) Examine the retract actuator assembly as follows:

1) Damage, looseness and security of actuator components and attachment bolts.

2) Dirt, scratches and debris on exposed piston chrome and actuator body rod end.

3) Leaks and loose hydraulic connections.

(b) Examine the walking beam and the attachment bolts for damage, looseness and security.

(c) Examine the attachments of the beam hanger for security and damage.

(d) Examine the uplock mechanism for damage and security of attachments.

(e) Examine the hydraulic connections of the uplock and the downlock actuator assemblies for leaks and security of attachments.

(f) Do these steps to examine the shock strut:

1) Examine the shock strut for leaks and specified extension, do this task Main Landing Gear Shock Strut Seal Leakage Check, TASK 32-11-21-200-801.

2) Examine the exposed surface of the inner cylinder for dirt, scratches or galling, do this task Landing Gear Inner Cylinder Chrome Inspection, TASK 32-00-10-211-801.

(g) On the right landing gear only, examine the ground spoiler interlock valve cable for damage, corrosion and security of attachments.

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(h) Examine the attachments of the side strut assembly for corrosion, damage or missing pins and cross bolts.

1) Examine the components of the side strut assembly for damage or missing pins and cross bolt.

(i) Make sure that the wing door is correctly attached to the push rod and the stabilizer link assembly.

1) Examine the attaching hardware for condition and security.

(j) Make sure that the shock strut doors are correctly attached to the shock strut.

1) Examine the attaching hardware for condition and security.

SUBTASK 32-11-00-210-002

(2) Examine the lower end components of the main landing gear:

(a) Do this task: Tires - Inspection, TASK 32-45-00-700-803.

(b) Do this task: Wheels Fast Check (Wheel Installed on the Airplane), TASK 32-45-00-700-801.

(c) Examine the brake hydraulic hoses for chafing and leaks.

(d) Examine the air/ground sensors and all the electrical wiring for security and chafing.

(e) Make sure that the torsion links are correctly attached to the shock strut.

1) Examine the attachment lugs of the torsion links for cracks.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-00-410-004

(1) Close the applicable access panel:

(a) For the left landing gear, do this step:

Close this access panel:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

(b) For the right landing gear, do this step:

Close this access panel:

Number	Name/Location
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

END OF TASK

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1 RIGHT MAIN LANDING GEAR SIDE ONLY

RIGHT MAIN LANDING GEAR (LEFT MAIN LANDING GEAR IS EQUIVALENT)

G29390 S0006574766_V4

Main Landing Gear Inspection
Figure 601/32-11-00-990-802

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MAIN LANDING GEAR SHOCK STRUT SEALS - REPAIRS

1. General

A. There are three tasks in this procedure that supply instructions to replace the seals on the shock strut of the main landing gear:

(1) The first task is to replace the active seals with the spare seals on the lower bearing carrier.

(2) The second task is to install new dynamic seals, new static seals, and new spare seals.

(3) The third task is to replace the scraper ring with a split scraper ring. This task would be used when the scraper ring is damaged and removing the inner cylinder is not possible.

B. The fourth task is to check hydraulic leaks on the shock strut of the main landing gear.

TASK 32-11-21-960-801

2. Replace the Active Seals with the Spare Seals

(Figure 801, Figure 802)

A. General

(1) This task replaces the active static seal and active dynamic seal with the spare seals on the lower bearing carrier of the main landing gear.

(2) If you do not have a split scraper ring available, you can cut the damaged scraper ring and re-install it for a limited amount of time.

(3) It is acceptable to operate the aircraft with a missing section of the energizer ring or other damage to the scraper ring. The scraper ring should be replaced with a new solid scraper ring or split scraper ring at the earliest maintenance opportunity to avoid excessive damage to the dynamic seal. If you do not have a split scraper ring available, you can cut a solid scraper ring or the damaged scraper ring to re-install it.

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-51-020-801	Main Landing Gear Torsion Link Disconnection (P/B 401)
32-11-51-400-803	Main Landing Gear Torsion Link Connection (P/B 401)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
SPL-1340	Spacer Assy, C32017-4 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1341	Carrier Puller Assy, C32017-5 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1342	Dynamic Seal Clamp Assy, C32017-7 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1343	Thread Protector Retainer Assy, C32017-8 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1344	Thread Protector, C32017-9 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1347	Dynamic Seal Plunger, C32017-23 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205
SPL-3927	Strap Assy, C32017-60 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-10997	Wrench Adapter - Gland Nut, Shock Strut MLG Part #: F80033-8 Supplier: 81205
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)
STD-1140	Hose - Flexible, 1/2 Inch ID, BMS 3-11 Resistant, 10 Foot

D. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
13	O-ring	32-11-21-03A-070	LOM ALL
16	Spare static seal	32-11-21-03A-085	LOM ALL

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(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
17	Spare dynamic seal	32-11-21-03A-090	LOM ALL

F. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

G. Prepare for the Replacement

SUBTASK 32-11-21-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-21-860-001

(2) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-21-860-002

(3) Operate the brakes twelve times to remove pressure from the brake accumulator.

SUBTASK 32-11-21-480-002

(4) Set the wing jacks correctly to keep the airplane level prior to deflating the Main Landing Gear (MLG) shock strut [1] (TASK 07-11-01-580-815).

NOTE: The airplane is to be lifted further in a subsequent step.

SUBTASK 32-11-21-860-003

(5) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
B	16	C01346	LANDING GEAR PARKING BRAKE
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

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SUBTASK 32-11-21-020-001

> **WARNING** DO NOT REMOVE THE VALVE BODY UNLESS YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE AN INJURY.

(6) Deflate the shock strut [1] for the main landing gear.

(a) Remove the cap [2] for the gas valve [3].

(b) Loosen the swivel nut [4] a maximum of two turns.

NOTE: Fluid in the shock strut [1] will have bubbles when you release the pressure. Deflate the shock strut [1] slowly to prevent the leakage of the fluid through the gas valve.

(c) Loosen the swivel nut [4] fully when all of the pressure in the shock strut [1] is released.

SUBTASK 32-11-21-680-001

(7) Drain the oil from the shock strut [1] for the main landing gear.

(a) Remove the cap [5] from the oil charging valve [6].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110, in a position to catch the shock strut fluid when the oil charging valve [6] is opened.

(c) Install the drain equipment on the oil charging valve [6].

1) Install the landing gear shock strut drain valve, SPL-1829, on the oil charging valve [6] to drain the shock strut [1].

2) If you wish to drain the shock strut [1] with a quicker method, do the steps that follow:

a) Cut a length of plastic ten foot hose (1/2 inch ID), STD-1140, long enough to reach the container on the floor.

b) Insert a small allen wrench in the end of the length of tubing, such that the end of the long part of the allen wrench is flush with the end of the tube and short part penetrates the side wall of the tube.

c) Install the ten foot hose (1/2 inch ID), STD-1140, on the oil charging valve [6] such that the allen wrench goes into the charging valve and holds it open to drain the hydraulic fluid.

(d) Remove the drain equipment when you have removed all of the shock strut oil.

SUBTASK 32-11-21-020-002

(8) Do this task: Main Landing Gear Torsion Link Disconnection, TASK 32-11-51-020-801.

SUBTASK 32-11-21-480-003

(9) Use rope to hold the disconnected end of the upper torsion link and attach it to the outer cylinder [8].

NOTE: This step will hold the upper torsion link in its position when you do the subsequent steps.

SUBTASK 32-11-21-480-004

(10) Lift the airplane until there is more than enough room to install the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341) on the inner cylinder [12] after the gland nut [19] has been removed, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

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SUBTASK 32-11-21-020-003

(11) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

NOTE: This procedure will also remove the wheel and the tire assemblies. Also, this will give better access to the inner cylinder [12] and outer cylinder [8].

SUBTASK 32-11-21-580-001

(12) Use axle jack to hold the inner cylinder [12] in its position in the outer cylinder [8], do this task: Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801.

SUBTASK 32-11-21-020-004

(13) Remove the gland nut [19].

(a) Remove the bolts [26], washers [25], and nuts [24] for the plate [23] to release the gland nut [19].

(b) Wind a cloth around the chrome surface of the inner cylinder [12].

NOTE: This will prevent damage to the inner cylinder [12] when the gland nut [19] moves down.

I (c) Use the gland nut wrench adapter, SPL-10997, to remove the gland nut [19] from the outer cylinder [8].

1) Loosen the gland nut [19] until it is disconnected from the outer cylinder [8].

NOTE: Do not move the gland nut [19] down the inner cylinder [12].

SUBTASK 32-11-21-580-002

(14) Lower the axle jack until the gland nut [19] is approximately 3 in. (7.6 cm) below the outer cylinder [8].

NOTE: This will allow you to install the spacer assembly [51], such that the gland nut [19] slide down the inner cylinder [12].

SUBTASK 32-11-21-480-010

(15) Install the spacer assembly [51] (spacer assy, C32017-4, SPL-1340).

(a) Put the spacer assembly [51] (spacer assy, C32017-4, SPL-1340) around the gland nut [19].

(b) Tighten the retainer screws to hold the spacer assembly [51] (spacer assy, C32017-4, SPL-1340) on its position.

(c) Move the spacer assembly [51] (spacer assy, C32017-4, SPL-1340) with the gland nut [19] down the inner cylinder [12].

SUBTASK 32-11-21-020-005

(16) Remove the lower bearing carrier [11] from the outer cylinder [8].

(a) Loosely install the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341) around the inner cylinder [12].

(b) Push the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341) up, such that it is installed correctly at the bottom of the outer cylinder [8].

(c) Align the holes in the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341) with the holes in the lower bearing carrier [11] for the carrier puller screws [52].

(d) Install the carrier puller screws [52] to hold the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341) to the lower bearing carrier [11].

(e) Tighten the retainer screws on each side of the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341).

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(f) Install the strap assembly [47] (strap assy, C32017-60, SPL-3927) around the axle and connect the ends to the shoulder bolts on each side of the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341).

(g) Lift the airplane until there is enough room to install the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343) at the bottom of the outer cylinder [8], do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-11-21-480-011

WARNING

MAKE SURE THAT YOU INSTALL THE RETAINER ASSEMBLY CORRECTLY. IF YOU DO NOT INSTALL THE RETAINER ASSEMBLY CORRECTLY, THE SPACER CAN MOVE DOWN THE INNER CYLINDER QUICKLY. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(17) If the spacer [10] has moved down the inner cylinder [12] with the lower bearing carrier [11], push it back into the outer cylinder [8].

NOTE: The retainer assy will hold the spacer [10] inside the outer cylinder [8] and prevent it from moving down the inner cylinder [12].

(a) Install the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343) as follows:

1) Loosely install the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343) around the inner cylinder [12].

2) Push the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343) up, such that it is installed correctly at the bottom of the outer cylinder [8].

3) Tighten the retainer screws on each side of the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343).

4) Move the two retainer plates on each side of the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343), such that they touch the chrome surface of the inner cylinder [12].

5) Tighten the four shoulder bolts to hold the two retainer plates in their position.

6) Put the snapper pin to prevent movement of the retainers.

7) Install the strap assembly [47] (strap assy, C32017-60, SPL-3927) around the outer cylinder [8] and connect the ends to the shoulder bolts on each side of the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343).

SUBTASK 32-11-21-580-003

(18) Continue to lift the airplane until the lower bearing carrier [11] is completely out of the outer cylinder [8], do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

NOTE: Lift the airplane a minimum of 77 in. (2 m) from the floor to the lowest point on the MLG inner door in order to have the airplane high enough from the floor.

SUBTASK 32-11-21-020-029

(19) Push the lower bearing carrier [11] down the inner cylinder [12] until it rests on the spacer assembly [51] (spacer assy, C32017-4, SPL-1340) with the gland nut [19].

NOTE: The lower bearing carrier [11] is coated with a dry lube film. The film may be worn and appear uneven. This is not a cause for bearing carrier replacement.

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H. Active Static and Active Dynamic Seal with the Spare Seals Replacement

SUBTASK 32-11-21-900-001

> **CAUTION** MAKE SURE THAT YOUR HANDS, TOOLS AND THE WORK AREA ARE CLEAN BEFORE YOU HANDLE THE ELASTOMER SEALS. SOME GREASES CAN CAUSE THE ELASTOMER SEALS TO SWELL. IF YOU DO NOT OBEY, SEAL LEAKS CAN OCCUR.

(1) Replace the active static seal [15] with a spare static seal [16].

(a) Remove the brown rings from around the active static seal [15].

(b) Make sure that the brown rings are serviceable.

NOTE: Install new brown rings if there are nicks, scratches or other damage to the old brown rings. The recommended installation is to replace all the old brown rings with new brown rings. Use the old brown rings only after a full inspection, and new rings are not available.

(c) Use a tool for cutting plastic that has a back-up strip to cut the active static seal [15] from its outer groove in the lower bearing carrier [11].

(d) Move the spare static seal [16] out of the spare seal groove of the lower bearing carrier [11].

> **CAUTION** DO NOT APPLY VASELINE OR PETROLATUM TO THE SEALS. THIS CAN CAUSE THE SEAL MATERIAL TO BECOME LARGER. DAMAGE TO THE SEALS CAN OCCUR.

(e) Wipe the spare static seal [16] and brown rings to remove any unwanted assembly lubricant or hydraulic fluid.

(f) Install the spare static seal [16] on the active static seal groove of the lower bearing carrier [11].

(g) Install the brown rings on the spare static seal [16], with the rounded edge of the brown rings against the seal.

SUBTASK 32-11-21-020-030

(2) Remove the seal retainer [22].

(a) Remove the o-ring [13] for the seal retainer [22].

(b) Remove the retainer pins [21].

(c) Move the seal retainer [22] away from the lower bearing carrier [11] to get access to the location for the active dynamic seal [14].

(d) Use tape to hold the seal retainer [22] around the inner cylinder [12], and prevent it from moving down on the lower bearing carrier [11].

SUBTASK 32-11-21-900-002

(3) Replace the active dynamic seal [14] with a spare dynamic seal [17].

NOTE: Make sure your hands are clean when you handle the elastomer seals. Some greases can cause the elastomer seals to swell too much. This can cause the seals to leak.

(a) Remove the active dynamic seal [14].

1) Move the lower bearing carrier [11] up and down the inner cylinder [12] to move the active dynamic seal [14] backup ring, and cap from the inner groove of the lower bearing carrier [11].

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2) If the active dynamic seal [14], backup ring, and cap does not come out of the inner groove of the lower bearing carrier [11], remove them with a tool which is not sharp.

NOTE: Hardened steel cotter pin removal tools work well for removing the dynamic seal.

3) Use a tool for cutting plastic that has a back-up strip to cut the old active dynamic seal [14], backup ring, and cap from the inner groove of the lower bearing carrier [11].

(b) Move one of the spare dynamic seal [17] from the spare seals groove of the lower bearing carrier [11] and move it into the inner cylinder [12].

NOTE: The round sealing surface of the seal must be against the chrome on the inner cylinder [12].

(c) Remove the spare backup rings from the spare seals groove of the lower bearing carrier [11].

CAUTION DO NOT APPLY VASELINE OR PETROLATUM TO THE SEALS. THIS CAN CAUSE THE SEAL MATERIAL TO BECOME LARGER. DAMAGE TO THE SEALS CAN OCCUR.

(d) Wipe the spare dynamic seal [17] and spare backup rings to remove any unwanted assembly lubricant or hydraulic fluid.

CAUTION MAKE SURE THAT THE BACKUP RINGS AND THE SEAL STAY TOGETHER WHEN YOU INSTALL THE SEAL. IF THE BACKUP RINGS AND THE SEAL MOVE APART, THEY WILL NOT INSTALL CORRECTLY. THIS CAN CAUSE DAMAGE TO THE SEAL AND THE BACKUP RINGS.

(e) Install the spare dynamic seal [17].

1) Install one of the brown backup ring [29] in the inner groove for the dynamic seal.

2) Install one of the white backup ring [28] in the inner groove for the dynamic seal, with the split in an opposite position on the diameter of the inner cylinder [12] as the brown backup ring, and with the rounded edge facing up.

3) Make sure that the backup rings are tight against the inner cylinder [12].

4) Use the dynamic seal clamp assembly [54] (clamp assy, C32017-7, SPL-1342) to install the spare dynamic seal [17] in the inner groove for the dynamic seal, with the rounded edge against the inner cylinder [12].

5) Use the dynamic seal plunger [53] (plunger, C32017-23, SPL-1347) to push the spare dynamic seal [17] in the inner groove of the lower bearing carrier [11].

6) Install the other white backup ring [28] in the inner groove for the dynamic seal, with the rounded edge facing the spare dynamic seal [17].

7) Install the other brown backup ring [29] in the inner groove for the dynamic seal, with the split in an opposite position on the diameter of the inner cylinder [12] as the white backup ring.

8) Make sure that the dynamic seal assembly is together, without any twists or bulges.

SUBTASK 32-11-21-420-002

(4) Install the seal retainer [22].

(a) Remove the tape that holds the seal retainer [22] from around the inner cylinder [12].

(b) Move the seal retainer [22] down on the lower bearing carrier [11].

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(c) Install the retainer pins [21] to hold the seal retainer [22] on the lower bearing carrier [11].

(d) Install the o-ring [13] to hold the retainer pins [21] in their positions.

SUBTASK 32-11-21-020-031

WARNING	MAKE SURE THAT THE RETAINER PLATES ARE INSTALLED TO HOLD THE SPACER IN THE OUTER CYLINDER. IF THE RETAINER PLATES ARE NOT INSTALLED, THE SPACER CAN MOVE DOWN THE INNER CYLINDER QUICKLY. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Move the retainer plates for the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343).

(a) Remove the two snapper pins.

(b) Loosen the four shoulder bolts that hold the two retainer plates in their positions.

(c) Move the two retainer plates away from the chrome surface of the inner cylinder [12].

SUBTASK 32-11-21-480-013

(6) If the spacer [10] has moved down the inner cylinder [12] with the lower bearing carrier [11], push it back into the outer cylinder [8].

SUBTASK 32-11-21-420-021

(7) Carefully put the thread protector [48] (thread protector, C32017-9, SPL-1344) between the outer cylinder [8] and the inner cylinder [12].

NOTE: The thread protector will expand and press against the outer cylinder [8]. This will protect the static seals from the gland nut threads on the outer cylinder [8].

SUBTASK 32-11-21-080-005

(8) Remove the strap assembly [47] (strap assy, C32017-60, SPL-3927) around the axle and from the shoulder bolts on each side of the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341).

SUBTASK 32-11-21-580-014

(9) Slowly lower the airplane so that the top of the lower bearing carrier [11] is approximately 1 in. (3 cm) to 3 in. (8 cm) from the bottom of the outer cylinder [8]. If the seals were replaced on one side only, then depressurize the opposite shock strut [1] prior to lowering the airplane.

SUBTASK 32-11-21-580-004

(10) To lift the inner cylinder [12] slowly with the axle jack until the bottom of the lower bearing carrier [11] is about 1.5 in. (3.8 cm) from the bottom of the outer cylinder [8], do this task: Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801.

(a) Make sure that the static seals stay in their positions as the lower bearing carrier [11] is installed.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-21-080-006

(1) Remove the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341).

(a) Remove the carrier puller screws [52] to disconnect the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341) from the lower bearing carrier [11].

(b) Loosen the two retainer screws and pull the carrier puller assembly [50] (carrier puller assy, C32017-5, SPL-1341) out of the outer cylinder [8].

SUBTASK 32-11-21-080-007

(2) Remove the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343).

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(a) Remove the strap assembly [47] (strap assy, C32017-60, SPL-3927) that holds the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343) to the outer cylinder [8].

(b) Loosen the two retainer screws and remove the thread protector retainer assembly [49] (retainer assy, C32017-8, SPL-1343).

SUBTASK 32-11-21-020-009

(3) Remove the thread protector [48] (thread protector, C32017-9, SPL-1344) inside the outer cylinder [8].

SUBTASK 32-11-21-640-001

(4) Remove the spacer assembly [51] (spacer assy, C32017-4, SPL-1340) from around the gland nut [19].

SUBTASK 32-11-21-620-002

WARNING	DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(5) Apply a thin layer of corrosion inhibiting material, G50136 (preferred), or corrosion preventive Cor-Ban 27L Compound, G50237 (alternate), to these items:

(a) The threads and thread reliefs of the bolts [26].

(b) The threads of the nuts [24].

(c) The splines and faces of the washers [25].

SUBTASK 32-11-21-620-004

(6) Apply a thick layer of corrosion preventive Cor-Ban 27L Compound, G50237 to these components:

(a) The gland nut [19] thread major and minor diameters.

(b) The mating outer cylinder [8] thread major and minor diameters.

(c) The outer cylinder [8] thread relief.

SUBTASK 32-11-21-160-003

WARNING	DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(7) Remove all unwanted corrosion inhibiting material, G50136, or corrosion preventive Cor-Ban 27L Compound, G50237.

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SUBTASK 32-11-21-420-004

(8) Install the gland nut [19].

(a) Move the gland nut [19] up to the outer cylinder [8] and engage the gland nut threads.

(b) Use the gland nut wrench adapter, SPL-10997, to torque the gland nut [19] to 125 ft-lb (169 N·m) – 150 ft-lb (203 N·m).

SUBTASK 32-11-21-420-005

(9) Install the plate [23] for the gland nut [19].

(a) Install the plate [23] in the holes that will put the tab of the plate [23] as close to a slot in the gland nut [19] as possible.

1) If it is necessary, loosen the gland nut [19] a small amount to help with the alignment.

(b) Install the bolts [26], washers [25], and nuts [24].

(c) Apply compound, A00226 (View B-B, Figure 801).

1) Make sure that the seal made by compound, A00226, will break if the bolts [26] are loosened.

SUBTASK 32-11-21-420-037

(10) Remove the rope that holds the disconnected end of the upper torsion link to the outer cylinder [8].

SUBTASK 32-11-21-420-038

(11) Do this task: Main Landing Gear Torsion Link Connection, TASK 32-11-51-400-803.

SUBTASK 32-11-21-020-010

(12) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: This task will also install the wheel and tire assemblies.

SUBTASK 32-11-21-080-009

(13) Remove the axle jack (TASK 07-11-03-580-801).

SUBTASK 32-11-21-080-001

(14) Lower the airplane and remove the jacks, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-11-21-420-008

(15) Install the oil valve cap [5] loosely.

SUBTASK 32-11-21-600-001

(16) Do this task: Main Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-31-610-802.

SUBTASK 32-11-21-860-007

(17) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
B	16	C01346	LANDING GEAR PARKING BRAKE
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1

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(Continued)

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Shock Strut Seal Replacement
Figure 801/32-11-21-990-801 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G70224 S0006574771_V2

Main Landing Gear Shock Strut Seal Replacement
Figure 801/32-11-21-990-801 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3034075 S0000804166_V1

Main Landing Gear Shock Strut Seal Replacement
Figure 801/32-11-21-990-801 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G70417 S0006574772_V4

Main Landing Gear Shock Strut Seal Replacement
Figure 801/32-11-21-990-801 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Shock Strut Seal Replacement
Figure 801/32-11-21-990-801 (Sheet 5 of 6)

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SCRAPER INSTALLATION (EXAMPLE)

F

SCRAPER INSTALLATION (OPTIONAL)

F

1 THIS VIEW FOR SCRAPER RING INSTALLATION P/N S37967-441G99.

2337520 S0000530600_V3

Main Landing Gear Shock Strut Seal Replacement
Figure 801/32-11-21-990-801 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H17704 S0006574774_V5

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 1 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3034244 S0000804167_V1

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 2 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 3 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H17722 S0006574776_V2

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 4 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 5 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H17769 S0006574778_V2

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 6 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 7 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 8 of 11)

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Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 9 of 11)

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H17778 S0006574781_V2

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 10 of 11)

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1 USE THREAD PROTECTOR FOR LOWER BEARING CARRIER INSTALLATION ONLY.

H17779 S0006574782_V2

Main Landing Gear Lower Bearing Seal Replacement
Figure 802/32-11-21-990-802 (Sheet 11 of 11)

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TASK 32-11-21-960-802

3. **Replace the Active and the Spare Seals**

(Figure 801, Figure 802, Figure 803, Figure 804)

A. **General**

(1) This procedure supplies instructions to install new dynamic seals, new static seals, and new spare seals.

NOTE: To do this procedure it is necessary to disconnect the inner cylinder from the outer cylinder.

(2) Use this procedure when there are no spare seals available on the lower bearing carrier to replace the active seals, and you will install a new 3-piece active dynamic seal.

B. **References**

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)
32-42-00-710-802	Transducer Operational Test (P/B 501)
32-42-11-000-801	Transducer Removal (P/B 401)
32-42-11-400-801	Transducer Installation (P/B 401)
SWPM 20-60-03	Special Protection of Electrical Connectors

C. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1340	Spacer Assy, C32017-4 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1341	Carrier Puller Assy, C32017-5 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1343	Thread Protector Retainer Assy, C32017-8 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205

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(Continued)

Reference	Description
SPL-1344	Thread Protector, C32017-9 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1345	Upper Sleeve Assy, C32017-10 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1348	Dynamic Seal Sleeve, C32017-54 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1349	Ram Assy, C32017-30 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205
SPL-3927	Strap Assy, C32017-60 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-10997	Wrench Adapter - Gland Nut, Shock Strut MLG Part #: F80033-8 Supplier: 81205
SPL-13151	Seal Retainer, C32017-45 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-13152	Retainer Pin, C32017-46 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-13153	O-Ring Assy, C32017-47 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)
STD-1140	Hose - Flexible, 1/2 Inch ID, BMS 3-11 Resistant, 10 Foot

D. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
B00130	Alcohol - Isopropyl	TT-I-735
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D00589	Lubricant - Hydraulic Assembly - AFS-682	
D00633	Grease - Aircraft General Purpose	BMS3-33
D50004	Compound - Antiseize	BMS3-28
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32 Type I

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(Continued)

Reference	Description	Specification
G02166	Lockwire - MS20995NC20, Monel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38
G51677	Cloth - 100% Synthetic or Blended Synthetic, Cotton or Cellulose Material	AMS3819 Class 1, 2, or 4, Grade A or B, Form 1

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
13	O-ring	32-11-21-03A-070	LOM ALL
14	Active dynamic seal	32-11-21-03A-115	LOM ALL
15	Active static seal	32-11-21-03A-080	LOM ALL
16	Spare static seal	32-11-21-03A-085	LOM ALL
17	Spare dynamic seal	32-11-21-03A-090	LOM ALL
18	Spare static seal	32-11-21-03A-085	LOM ALL
20	Scraper ring	32-11-21-03A-100	LOM ALL
27	Excluder	32-11-21-03A-095	LOM ALL

F. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

G. Prepare for the Replacement

SUBTASK 32-11-21-480-005

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-21-860-004

(2) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-21-860-005

(3) Operate the brakes eight times to remove pressure from the brake accumulator.

SUBTASK 32-11-21-480-006

(4) Set the wing jacks correctly to keep the airplane level prior to deflating the Main Landing Gear (MLG) shock strut [1] (TASK 07-11-01-580-815).

NOTE: The airplane is to be lifted further in a subsequent step.

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SUBTASK 32-11-21-860-006

(5) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
B	16	C01346	LANDING GEAR PARKING BRAKE
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-11-21-020-011

WARNING DO NOT REMOVE THE VALVE BODY UNLESS YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE AN INJURY.

(6) Deflate the shock strut [1] for the main landing gear:

(a) Remove the cap [2] for the gas valve [3].

(b) Loosen the swivel nut [4] a maximum of two turns.

NOTE: Fluid in the shock strut [1] will have bubbles when you release the pressure. Deflate the shock strut [1] slowly to prevent the leakage of the fluid through the gas valve [3].

(c) Loosen the swivel nut [4] fully when all of the pressure in the shock strut [1] is released.

SUBTASK 32-11-21-680-002

(7) Drain the oil from the shock strut [1] for the main landing gear:

(a) Remove the cap [5] from the oil charging valve [6].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110, in a position to catch the shock strut fluid when the oil charging valve [6] is opened.

(c) Install the drain equipment on the oil charging valve [6]:

1) Install landing gear shock strut drain valve, SPL-1829, on the oil charging valve [6] to drain the shock strut [1].

2) If you wish to drain the shock strut [1] with a quicker method, do the steps that follow:

a) Cut a length of plastic ten foot hose (1/2 inch ID), STD-1140, long enough to reach the container on the floor.

b) Insert a small allen wrench in the end of the length of tubing, such that the end of the long part of the allen wrench is flush with the end of the tube and short part penetrates the side wall of the tube.

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c) Install the ten foot hose (1/2 inch ID), STD-1140, on the oil charging valve [6] such that the allen wrench goes into the charging valve and holds it open to drain the hydraulic fluid.

(d) Remove the drain equipment when you have removed all of the shock strut oil.

H. Prepare to Disconnect the Inner Cylinder from the Outer Cylinder

SUBTASK 32-11-21-020-012

(1) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

NOTE: This procedure will also remove the wheel and tire assemblies.

SUBTASK 32-11-21-020-013

(2) Remove the in-axle assemblies (TASK 32-42-11-000-801).

(a) Make sure that the label is attached to the wires to indicate the left and right connectors.

SUBTASK 32-11-21-020-015

(3) Disconnect the conduit assembly [42] and wiring assembly [43]:

LOM 432, 437, 438, 445, 464

(a) Remove the screws [90], nuts [93], and washers [92] to disconnect the conduit assembly [42] from the clamps [91].

LOM ALL

(b) Remove the screws [44] and washers [45] to disconnect the conduit assembly [42] from the clamps [46].

(c) Remove the lockwires from the fitting [41] and conduit nut [89].

1) Discard the lockwires.

(d) Loosen the conduit nut [89] to disconnect the conduit assembly [42] from the inner cylinder [12].

(e) Loosen the fitting [41].

(f) Pull the wiring assembly [43] with the electrical connectors [88] completely out of the axle [40] and inner cylinder [12].

1) Make sure that the label is attached to the wires to indicate the left and right connectors.

SUBTASK 32-11-21-020-032

(4) Disconnect the lower torsion link [81] from the inner cylinder [12]:

(a) Remove the cotter pin [87], nut [86], and washer [85] from the cross bolt [83].

(b) Remove the cross bolt [83] that holds the lower torsion link pin [82] to the spacer [84].

(c) Hold the lower torsion link [81] and remove the lower torsion link pin [82] to disconnect the lower torsion link [81] from the inner cylinder [12].

(d) Use a rope to hold the spacer [84] to the inner cylinder [12].

NOTE: This step will hold the spacer [84] in its position when you remove and install the lower torsion link in the subsequent steps.

SUBTASK 32-11-21-480-007

(5) Use the rope to hold the disconnected end of the lower torsion link, conduit assembly [42], and wiring assembly [43], such that they will be out of the way when you do the subsequent steps.

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SUBTASK 32-11-21-580-005

(6) Hold the inner cylinder [12] in place with the MLG axle jack while the subsequent steps are being performed.

SUBTASK 32-11-21-020-019

(7) Remove the gland nut [19]:

(a) Remove the bolts [26], washers [25], and nuts [24] for the plate [23] to release the gland nut [19].

(b) Wind a cloth around the chrome surface of the inner cylinder [12].

NOTE: This will prevent damage to the inner cylinder [12] when the gland nut [19] moves down.

(c) Use the gland nut wrench adapter, SPL-10997, to remove the gland nut [19] from the outer cylinder [8].

1) Loosen the gland nut [19] until it is disconnected from the outer cylinder [8].

NOTE: Do not move the gland nut [19] down the inner cylinder [12].

SUBTASK 32-11-21-480-014

(8) Install the spacer assy, C32017-4, SPL-1340 [51]:

(a) Put the spacer assy, C32017-4, SPL-1340 [51], around the gland nut [19].

(b) Tighten the retainer screws to hold the spacer assy, C32017-4, SPL-1340 [51], on its position.

(c) Move the spacer assy, C32017-4, SPL-1340 [51], with the gland nut [19] down the inner cylinder [12].

SUBTASK 32-11-21-580-006

(9) Lift the airplane with the jacks until the measurement from the bottom of the outer cylinder [8] to the ground is 60 in. (152 cm) (TASK 07-11-01-580-815).

SUBTASK 32-11-21-480-015

(10) Prepare sandbags to put the inner cylinder [12] down after its disconnected from the outer cylinder [8].

SUBTASK 32-11-21-020-020

WARNING

USE A MINIMUM OF FOUR PERSONS TO HOLD THE INNER CYLINDER WHEN YOU DO THE SUBSEQUENT STEPS. THE INNER CYLINDER WEIGHS APPROXIMATELY 320 LB (145 KG). INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT CAN OCCUR IF YOU DO NOT HOLD THE INNER CYLINDER CORRECTLY.

(11) Remove the inner cylinder [12]:

(a) Lower the axle jack slowly until the inner cylinder [12] is completely disconnected from the outer cylinder [8] (TASK 07-11-03-580-801).

(b) Hold the inner cylinder [12] in a vertical position.

SUBTASK 32-11-21-020-021

(12) Remove the upper bearing carrier [9]:

(a) Remove the upper bearings [55] from the upper bearing carrier [9].

NOTE: Pull the bearing apart slightly and slide it up and off the upper bearing carrier [9].

1) Inspect the upper bearings [55] for damage and excessive wear.

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a) The upper bearing [55] thickness must be greater than or equal to 0.0865 in. (2.1971 mm).

b) If it is necessary, replace the upper bearing [55].

(b) Remove the piston ring [56] from the upper bearing carrier [9].

(c) Remove the upper bearing carrier [9] halves from the inner cylinder [12].

SUBTASK 32-11-21-020-033

(13) Remove the recoil valve [57] from the inner cylinder [12].

SUBTASK 32-11-21-020-022

(14) Remove the spacer [10] from the inner cylinder [12].

SUBTASK 32-11-21-020-034

(15) Remove the seal retainer [22]:

(a) Remove the o-ring [13] for the seal retainer [22].

(b) Remove the retainer pins [21] to disconnect the seal retainer [22] from the lower bearing carrier [11].

(c) Remove the seal retainer [22] from the lower bearing carrier [11].

SUBTASK 32-11-21-020-023

(16) Remove the lower bearing carrier [11] from the inner cylinder [12]:

(a) Loosely install the carrier puller assy, C32017-5, SPL-1341 [50], around the inner cylinder [12].

(b) Align the holes in the carrier puller assy, C32017-5, SPL-1341 [50], with the holes in the lower bearing carrier [11] for the carrier puller screws [52].

(c) Put the carrier puller screws [52] through the holes in the bottom of the carrier puller assy, C32017-5, SPL-1341 [50], and in the lower bearing carrier [11].

(d) Tighten the carrier puller screws [52] to attach the carrier puller assy, C32017-5, SPL-1341 [50], to the lower bearing carrier [11].

(e) Tighten the retainer screws on each side of the carrier puller assy, C32017-5, SPL-1341 [50].

(f) Use a rubber mallet and lightly hit the bottom of the carrier puller assy, C32017-5, SPL-1341 [50], until the lower bearing carrier [11] can be pulled out off the top of the inner cylinder [12].

NOTE: The lower bearing carrier [11] is coated with a dry lube film. The film may be worn and appear uneven, this is not cause for bearing carrier replacement.

(g) Remove the carrier puller screws [52] to disconnect the carrier puller assy, C32017-5, SPL-1341 [50], from the lower bearing carrier [11].

(h) Remove the carrier puller assy, C32017-5, SPL-1341 [50], from the lower bearing carrier [11].

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SUBTASK 32-11-21-840-002

> **WARNING** USE A MINIMUM OF FOUR PERSONS TO HOLD THE INNER CYLINDER WHEN YOU DO THE SUBSEQUENT STEPS. THE INNER CYLINDER WEIGHS APPROXIMATELY 320 LB (145 KG). INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT CAN OCCUR IF YOU DO NOT HOLD THE INNER CYLINDER CORRECTLY.

(17) Slowly put the inner cylinder [12] down on sandbags.

NOTE: If it is necessary attach a strap to the inner cylinder [12] to assist when lowering onto the sandbags.

SUBTASK 32-11-21-640-003

> **CAUTION** DO NOT APPLY VASELINE OR PETROLATUM TO THE SEALS. THIS CAN CAUSE THE SEAL MATERIAL TO BECOME LARGER. DAMAGE TO THE SEALS CAN OCCUR.

(18) Lubricate the replacement seals with fluid, D00467, or AFS-682 lubricant, D00589:

(a) These are the seals that can be necessary:

1) 2 spare static seals
2) 2 spare dynamic seals
3) 1 active static seal
4) 1 active dynamic seal
5) 1 excluder
6) 1 scraper ring.

I. New Active Static Seal, New Spare Static Seals, New Spare Dynamic Seals, a New Active Dynamic Seal, a New Excluder, and a New Scraper Ring Installation

SUBTASK 32-11-21-840-001

(1) Remove the lower bearing insert [69] from the lower bearing carrier [11].

(a) Inspect the lower bearing insert [69] for damage and excessive wear.

1) The lower bearing insert [69] thickness must be greater than or equal to 0.0865 in. (2.1971 mm).
2) If it is necessary, replace the lower bearing insert [69] .

SUBTASK 32-11-21-420-032

(2) Install the lower bearing insert [69] on the lower bearing carrier [11].

SUBTASK 32-11-21-900-003

(3) Install the new scraper ring [20] on the lower bearing carrier [11]:

NOTE: The scraper ring [20] prevents dirt and debris from entering the shock strut [1] when the inner cylinder [12] and outer cylinder [8] compress.

(a) Remove the old scraper ring [20] from its groove on the lower bearing carrier [11].

(b) Install the new scraper ring [20] in its groove on the lower bearing carrier [11].

NOTE: There are two possible scraper configurations used for installation (Figure 801). Make sure to use the correct scraper configuration that will be installed in its groove on the lower bearing carrier [11].

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SUBTASK 32-11-21-900-004

(4) If there are signs of damage or wear, do these steps to replace the excluder [27] on the lower bearing carrier [11]:

NOTE: The excluder prevents dirt and debris from damaging the active static seal.

(a) Remove the old excluder [27] from its groove in the lower bearing carrier [11].

(b) Do these steps to install the new excluder [27] in its groove in the lower bearing carrier [11].

1) Put the new excluder [27] in a sealed plastic bag and submerge the bag in hot water (not boiling) for 3-5 minutes.

2) Apply a thin layer of fluid, D50022, (preferred), or fluid, D00467, (alternate) onto the excluder [27].

3) Put shock fluid, D50022, (preferred), or fluid, D00467, (alternate) on the surface on which the excluder [27] will move.

4) Position the excluder [27] evenly on the carrier with the spring facing down (toward the gland nut).

a) Zip ties can be used to help with this step.

5) Carefully slide the excluder [27] into position in its carrier groove.

6) Make sure that you move the seal evenly down the carrier and do not allow it to roll over.

7) Make sure that the excluder [27] stays in its proper position until it reaches room temperature and has conformed to its original shape.

a) A compression ring can be used to lightly hold the excluder in its place until it reaches room temperature.

SUBTASK 32-11-21-840-003

(5) Put the lower bearing carrier [11] in the up position.

SUBTASK 32-11-21-900-010

(6) Install the new spare static seal [18] on the lower bearing carrier [11]:

(a) Remove the old spare static seal [18] from its groove on the lower bearing carrier [11].

(b) Install the new spare static seal [18] in its groove on the lower bearing carrier [11].

SUBTASK 32-11-21-420-009

(7) Install the two spare dynamic seals [17], two brown backup ring [29], and two white backup ring [28]:

(a) Install the first spare dynamic seals [17] at the top of its groove on the lower bearing carrier [11].

(b) Apply a thin layer of fluid, D00467, or AFS-682 lubricant, D00589, to the brown backup ring [29] and white backup ring [28].

NOTE: The AFS-682 lubricant, D00589, will help keep the backup rings in their positions.

(c) Install the brown backup ring [29] and white backup ring [28] between the first spare dynamic seals [17] installed, with the rounded edge of the white rings against the seal.

(d) Install the second spare dynamic seals [17] from its groove in the lower bearing carrier [11], with the edge overlaps to the first spare dynamic seal installed.

SUBTASK 32-11-21-900-005

(8) Install the new spare static seal [16] on the lower bearing carrier [11]:

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(a) Remove the old spare static seal [16] from its groove on the lower bearing carrier [11].

(b) Install the new spare static seal [16] in its groove on the lower bearing carrier [11].

SUBTASK 32-11-21-900-006

(9) Install the new active static seal [15] on the lower bearing carrier [11]:

(a) Remove the two brown rings from around the active static seal [15].

(b) Make sure that the brown rings are serviceable.

NOTE: Install new brown rings if there are nicks, scratches, or other damage. The recommended installation is to replace all the old brown rings with new brown rings. Use the old brown rings only after a full inspection, and new rings are not available.

(c) Remove the old active static seal [15] from its groove on the lower bearing carrier [11].

(d) Install the new active static seal [15] in its groove on the lower bearing carrier [11].

(e) Apply a thin layer of fluid, D00467, or AFS-682 lubricant, D00589, to the brown rings.

NOTE: The AFS-682 lubricant, D00589, will help keep the brown rings in their positions.

(f) Install the brown rings on the new active static seal [15] with the rounded edge of the brown rings against the seal.

SUBTASK 32-11-21-900-007

(10) Install the new active dynamic seal [14] in the lower bearing carrier [11]:

(a) Remove the cap, active dynamic seal [14], and backup ring from the inner groove for the dynamic seal.

CAUTION

DO NOT APPLY VASELINE OR PETROLATUM TO THE SEALS. THIS CAN CAUSE THE SEAL MATERIAL TO BECOME LARGER. DAMAGE TO THE SEALS CAN OCCUR.

(b) Apply AFS-682 lubricant, D00589, to the active dynamic seal [14] to help keep the seal parts together.

(c) Install the backup ring part of the new active dynamic seal [14] in the inner groove for the dynamic seal.

NOTE: Position the backup ring toward the bottom end of the shock strut with the curved corners of the backup ring against the seal (Figure 801).

(d) Install the seal part of the new active dynamic seal [14] in inner groove for the dynamic seal.

(e) Install the cap part of the new active dynamic seal [14].

SUBTASK 32-11-21-420-022

(11) Install the seal retainer [22] or optional seal retainer, C32017-45, SPL-13151 [66]:

NOTE: You may use optional seal retainer, C32017-45, SPL-13151 [66], to aid in properly installing the dynamic seal.

(a) Install the production seal retainer [22].

1) Put the seal retainer [22] in its position on the lower bearing carrier [11].

2) Install the retainer pins [21] to connect the seal retainer [22] to the lower bearing carrier [11].

3) Install the new o-ring [13] to hold the retainer pins [21] in its position.

(b) Install the optional seal retainer, C32017-45, SPL-13151 [66]:

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1) Put the seal retainer, C32017-45, SPL-13151 [66], in its position on the lower bearing carrier [11].

2) Install the retainer pin, C32017-46, SPL-13152 [67], to connect the seal retainer to the lower bearing carrier [11].

3) Install the o-ring assy, C32017-47, SPL-13153 [68], to hold the retainer pin, C32017-46, SPL-13152 [67], in position.

SUBTASK 32-11-21-840-004

WARNING	USE A MINIMUM OF FOUR PERSONS TO HOLD THE INNER CYLINDER WHEN YOU DO THE SUBSEQUENT STEPS. THE INNER CYLINDER WEIGHS APPROXIMATELY 320 LB (145 KG). INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT CAN OCCUR IF YOU DO NOT HOLD THE INNER CYLINDER CORRECTLY.

(12) Hold the inner cylinder [12] in a vertical position.

NOTE: If necessary attach a strap to the inner cylinder [12] to assist with holding in a vertical position.

SUBTASK 32-11-21-480-017

(13) Install the dynamic seal sleeve, C32017-54, SPL-1348 [60], at the top of the inner cylinder [12].

SUBTASK 32-11-21-020-024

(14) Install the lower bearing carrier [11]:

NOTE: You can install the lower bearing carrier [11] onto the dynamic seal sleeve, C32017-54, SPL-1348 [60], at the workbench and then install the dynamic seal guidesleeve, C32017-54, SPL-1348 [60], with the lower bearing carrier [11] onto the top of the cylinder.

CAUTION	MAKE SURE THAT THE BACKUP RINGS AND THE SEAL STAY TOGETHER WHEN YOU MOVE THE LOWER BEARING CARRIER. IF THE BACKUP RINGS AND THE SEAL MOVE APART, THEY WILL NOT INSTALL CORRECTLY. THIS CAN CAUSE DAMAGE TO THE SEAL AND THE BACKUP RINGS.

(a) Put the lower bearing carrier [11] in its position for installation on the inner cylinder [12].

(b) Use a rubber mallet and lightly hit the top of the lower bearing carrier [11] until it passes the dynamic seal sleeve, C32017-54, SPL-1348 [60].

(c) Use the ram assy, C32017-30, SPL-1349 [62], to push the lower bearing carrier [11] down to the inner cylinder [12].

NOTE: A 1 in. (25 mm) webbing may be used to assist in moving the ram assy, C32017-30, SPL-1349 [62].

NOTE: Leave enough room for the installation of the carrier puller assy, C32017-5, SPL-1341 [50].

SUBTASK 32-11-21-020-025

(15) Remove the ram assy, C32017-30, SPL-1349 [62], and dynamic seal sleeve, C32017-54, SPL-1348 [60], from the inner cylinder [12].

(a) If you used optional seal retainer, C32017-45, SPL-13151 [66], for the installation, then remove the o-ring assy, C32017-47, SPL-13153 [68], retainer pin, C32017-46, SPL-13152 [67], and seal retainer, C32017-45, SPL-13151 [66].

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(b) After removing the optional seal retainer, C32017-45, SPL-13151 [66], look down into the lower bearing carrier and examine the dynamic seal. The dynamic seal and cap should appear fully seated.

(c) Install the production seal retainer [22], retainer pins [21], and o-ring [13] onto the lower bearing carrier [11].

SUBTASK 32-11-21-420-023

(16) Put the spacer [10] down the inner cylinder [12] and on top of the lower bearing carrier [11].

SUBTASK 32-11-21-420-024

(17) Install the recoil valve [57] on the inner cylinder [12].

SUBTASK 32-11-21-420-010

(18) Install the upper bearing carrier [9]:

(a) Install the upper bearing carrier [9] halves on the inner cylinder [12].

(b) Install the piston ring [56] to hold the upper bearing carrier [9] halves around the inner cylinder [12].

(c) Install one of the upper bearings [55] on the lower groove of the upper bearing carrier [9] halves, with the split about 90 degrees from the split of the upper bearing carrier [9] halves.

NOTE: Make an overlap of 0.25 in. (0.64 cm) to the upper bearing [55] to keep their round shape.

(d) Install the other upper bearing [55] on the top groove of the upper bearing carrier [9] halves, with the split opposite the split of the first upper bearing [55] installed.

SUBTASK 32-11-21-420-011

(19) Install the upper sleeve assy, C32017-10, SPL-1345 [63]:

(a) Install the upper sleeve assy, C32017-10, SPL-1345 [63], such that it fits at the bottom of the outer cylinder [8].

(b) Install the straps strap assy, C32017-60, SPL-3927 [47], around the outer cylinder [8] and connect the ends to the shoulder bolts on the side of the upper sleeve assy, C32017-10, SPL-1345 [63].

1) Tighten the strap assy, C32017-60, SPL-3927 [47].

SUBTASK 32-11-21-420-012

CAUTION

MAKE SURE THAT YOU PUT THE INNER AND OUTER CYLINDER TOGETHER CAREFULLY. THE NEW SEALS CAN CATCH ON THE OUTER CYLINDER, OR THE INNER AND OUTER CYLINDERS CATCH WHEN YOU ASSEMBLE THEM. THIS CAN CAUSE DAMAGE TO THE EQUIPMENT.

(20) Slowly lift the inner cylinder [12] with the MLG axle jack such that the inner cylinder [12] goes into the outer cylinder [8] (TASK 07-11-03-580-801).

NOTE: Leave enough chrome visible on the inner cylinder [12] such that you can install the carrier puller assy, C32017-5, SPL-1341 [50].

SUBTASK 32-11-21-080-010

(21) Remove the upper sleeve assy, C32017-10, SPL-1345 [63], from the outer cylinder [8] after it goes on the upper bearing carrier [9].

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SUBTASK 32-11-21-420-025

(22) Carefully put the thread protector, C32017-9, SPL-1344 [48], between the outer cylinder [8] and inner cylinder [12].

NOTE: The thread protector will expand and press against the outer cylinder [8], this will protect the static seals from the gland nut [19] threads on the outer cylinder [8].

SUBTASK 32-11-21-480-018

(23) Install the retainer assy, C32017-8, SPL-1343 [49]:

(a) Install the retainer assy, C32017-8, SPL-1343 [49], around the inner cylinder [12], such that it fits at the bottom of the outer cylinder [8].

(b) Tighten the retainer screws on each side of the retainer assy, C32017-8, SPL-1343 [49].

(c) Move the two retainer plates for the retainer assy, C32017-8, SPL-1343 [49], such that it does not touch the chrome surface of the inner cylinder [12].

(d) Install the strap assy, C32017-60, SPL-3927 [47], around the outer cylinder [8] and connect the ends to the shoulder bolts on each side of the retainer assy, C32017-8, SPL-1343 [49].

SUBTASK 32-11-21-480-019

(24) Install the carrier puller assy, C32017-5, SPL-1341 [50]:

(a) Loosely install the carrier puller assy, C32017-5, SPL-1341 [50], around the inner cylinder [12], such that its below the lower bearing carrier [11].

(b) Align the holes in the carrier puller assy, C32017-5, SPL-1341 [50], with the holes in the lower bearing carrier [11] for the carrier puller screws [52].

(c) Put the carrier puller screws [52] through the holes in the carrier puller assy, C32017-5, SPL-1341 [50], and in the lower bearing carrier [11].

(d) Tighten the carrier puller screws [52] to attach the carrier puller assy, C32017-5, SPL-1341 [50], to the lower bearing carrier [11].

(e) Tighten the retainer screws on each side of the carrier puller assy, C32017-5, SPL-1341 [50].

SUBTASK 32-11-21-580-013

(25) Slowly lower the airplane so that the top of the lower bearing carrier [11] is approximately 1 in. (3 cm) to 3 in. (8 cm) from the bottom of the outer cylinder [8]. If the seals were replaced on one side only, then depressurize the opposite shock strut [1] prior to lowering the airplane.

SUBTASK 32-11-21-580-007

(26) Lift the inner cylinder [12] slowly with the MLG axle jack until the bottom of the lower bearing carrier [11] is about 1.5 in. (3.8 cm) from the bottom of the outer cylinder [8] (TASK 07-11-03-580-801).

(a) Make sure that the static seals stay in their positions as the lower bearing carrier [11] is installed.

SUBTASK 32-11-21-080-011

(27) Remove the retainer assy, C32017-8, SPL-1343 [49]:

(a) Remove the strap assy, C32017-60, SPL-3927 [47], that holds the retainer assy, C32017-8, SPL-1343 [49], to the outer cylinder [8].

(b) Loosen the retainer screws and remove the retainer assy, C32017-8, SPL-1343 [49].

SUBTASK 32-11-21-080-012

(28) Remove the thread protector, C32017-9, SPL-1344 [48], from the outer cylinder [8].

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SUBTASK 32-11-21-480-020

(29) Remove the spacer assy, C32017-4, SPL-1340 [51], from around the gland nut [19].

SUBTASK 32-11-21-080-013

(30) Remove the carrier puller assy, C32017-5, SPL-1341 [50]:

(a) Remove the carrier puller screws [52] to disconnect the carrier puller assy, C32017-5, SPL-1341 [50], from the lower bearing carrier [11].

(b) Loosen the retainer screws and pull the carrier puller assy, C32017-5, SPL-1341 [50], out of the outer cylinder [8].

SUBTASK 32-11-21-620-003

WARNING	DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(31) Apply a thin layer of corrosion inhibiting material, G50136, (preferred) or corrosion preventive Cor-Ban 27L Compound, G50237, (alternate) to these items:

(a) The threads and thread reliefs of the bolts [26].

(b) The threads of the nuts [24].

(c) The splines and faces of the washers [25].

SUBTASK 32-11-21-620-005

(32) Apply a thick layer of corrosion preventive Cor-Ban 27L Compound, G50237 to these components:

(a) The gland nut [19] thread major and minor diameters.

(b) The mating outer cylinder [8] thread major and minor diameters.

(c) The outer cylinder [8] thread relief.

SUBTASK 32-11-21-420-014

(33) Install the gland nut [19]:

(a) Move the gland nut [19] up to the outer cylinder [8] and engage the gland nut threads.

I (b) Use the gland nut wrench adapter, SPL-10997, to torque the gland nut [19] to 125 ft-lb (169 N·m) - 150 ft-lb (203 N·m).

(c) Install the plate [23] in the holes which will put the tab of the plate [23] as close to a slot in the gland nut [19] as possible.

NOTE: If it is necessary, loosen the gland nut [19] a small amount to help with the alignment.

(d) Install the bolts [26], washers [25], and nuts [24].

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(e) Apply compound, A00226.

NOTE: Apply it to make sure the seal made by the compound, A00226, will break if the bolts [26] are loosened.

SUBTASK 32-11-21-160-004

WARNING	DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(34) Remove all unwanted corrosion inhibiting material, G50136, or Cor-Ban 27L Compound, G50237.

J. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-21-420-026

(1) Before you connect the conduit assembly [42] and wiring assembly [43], examine the electrical connectors [88] for corrosion.

WARNING	DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, correct the problem (SWPM 20-60-03).

(b) Apply the D5026NS or ZC-026 compound, G50171, to the electrical connectors [88] (SWPM 20-60-03).

SUBTASK 32-11-21-420-033

(2) Connect the wiring assembly [43] and conduit assembly [42]:

(a) Put the wiring assembly [43] with the electrical connectors [88] into the inner cylinder [12] and axle [40].

(b) Clean the mating surfaces of the fitting [41] and conduit nut [89] with alcohol, B00130, and cloth, G51677.

(c) Apply compound, D50004 (preferred), or Cor-Ban 27L Compound, G50237 (alternative), to the threads of the fitting [41] and conduit nut [89].

(d) Tighten the fitting [41] to 45 in-lb (5.1 N·m) - 55 in-lb (6.2 N·m).

(e) Tighten the conduit nut [89] to 70 in-lb (7.9 N·m) - 90 in-lb (10.2 N·m) to connect the conduit assembly [42] to the inner cylinder [12].

(f) Install MS20995NC20 lockwire, G02166, on the fitting [41] and conduit nut [89].

(g) Put the conduit assembly [42] in its position for attachment to the clamps [46] on the bracket.

(h) Install the washers [45] and screws [44] to hold the conduit assembly [42] to the clamps [46].

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LOM 432, 437, 438, 445, 464

(i) Put the conduit assembly [42] in its position for attachment to the clamps [91] on the bracket.

(j) Install the washers [92], nuts [93], and screws [90] to hold the conduit assembly [42] to the clamps [91].

LOM ALL

SUBTASK 32-11-21-420-019

(3) Lower the inner cylinder [12] with the MLG axle jack.

SUBTASK 32-11-21-420-036

(4) Remove the rope that holds the disconnected end of the upper torsion link to the outer cylinder [8].

SUBTASK 32-11-21-080-016

(5) Remove the rope that holds the spacer [84] to the inner cylinder [12].

SUBTASK 32-11-21-620-006

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(6) Apply a thin layer of Cor-Ban 27L Compound, G50237, (preferred), or corrosion inhibiting material, G50136, (alternate) to the threads of the nut [86] and face of the washer [85].

SUBTASK 32-11-21-640-005

(7) Lubricate chrome plated surfaces of the lower torsion link pin [82] and cross bolt [83] with grease, D00633.

SUBTASK 32-11-21-160-008

(8) Remove all unwanted grease, D00633.

SUBTASK 32-11-21-420-035

(9) Connect the lower torsion link [81] to the inner cylinder [12]:

(a) Put the lower torsion link [81] in its position to the inner cylinder [12].

(b) Put the lower torsion link pin [82] through the clevis on the inner cylinder [12] and spacer [84].

(c) Align the hole in the lower torsion link pin [82] with the hole in the spacer [84] for the installation of the cross bolt [83].

(d) Put the cross bolt [83] through the spacer [84] and the lower torsion link pin [82].

(e) Install the washer [85] and nut [86] on the cross bolt [83].

(f) Torque the nut [86] to 160 in-lb (18 N·m) - 190 in-lb (21 N·m).

(g) Install the cotter pin [87] in the cross bolt [83].

1) If it is necessary, loosen the nut [86] to the nearest castellation to align the hole for the cotter pin [87].

SUBTASK 32-11-21-420-034

(10) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: This procedure will also install the wheel and tire assemblies.

(a) Make sure that the correct wires are connected to the correct in-axle assembly.

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LOM 432, 437, 438, 445, 464

(b) Make sure that the conduit assembly [42] is located with maximum clearance between the bracket and brake edge.

LOM ALL

SUBTASK 32-11-21-420-027

(11) Do this task: Transducer Installation, TASK 32-42-11-400-801.

SUBTASK 32-11-21-860-010

(12) If seals were replaced on one side only, then depressurize the opposite shock strut prior to lowering the airplane.

NOTE: This is to ensure symmetrical loading at the jackpoints as the airplane lowers to the ground.

SUBTASK 32-11-21-860-011

(13) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
B	16	C01346	LANDING GEAR PARKING BRAKE
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-11-21-420-028

(14) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-11-21-420-020

(15) Install the oil valve cap [5] loosely.

SUBTASK 32-11-21-600-002

(16) Do this task: Main Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-31-610-802.

SUBTASK 32-11-21-700-001

(17) Do this task: Transducer Operational Test, TASK 32-42-00-710-802.

END OF TASK

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2050388 S0000417317_V3

Lower Bearing Carrier Installation Using Optional Tooling
Figure 803/32-11-21-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2882567 S0000683246_V4

Main Landing Gear Lower Torsion Link Disconnection
Figure 804/32-11-21-990-804 (Sheet 1 of 3)

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3034248 S0000804463_V1

Main Landing Gear Lower Torsion Link Disconnection
Figure 804/32-11-21-990-804 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2882571 S0000683247_V1

Main Landing Gear Lower Torsion Link Disconnection
Figure 804/32-11-21-990-804 (Sheet 3 of 3)

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TASK 32-11-21-960-803

4. **Replace the Scraper Ring**

(Figure 801, Figure 802)

A. **General**

(1) Use the task to replace a damaged scraper ring with a split scraper ring. This task is performed when replacement of the scraper ring is required and removal of the inner cylinder is not possible.

(2) It is acceptable to operate the aircraft with a missing section of the energizer ring or other damage to the scraper ring. The scraper ring should be replaced with a new solid scraper ring or split scraper ring at the earliest maintenance opportunity to avoid excessive damage to the dynamic seal. If you do not have a split scraper ring available, you can cut a solid scraper ring or the damaged scraper ring to re-install it.

NOTE: The installation of a split scraper ring is also a temporary repair and should also be replaced at the earliest maintenance opportunity.

B. **References**

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01 P/B 201	LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES
32-11-51-020-801	Main Landing Gear Torsion Link Disconnection (P/B 401)
32-11-51-400-803	Main Landing Gear Torsion Link Connection (P/B 401)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)

C. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205
SPL-10997	Wrench Adapter - Gland Nut, Shock Strut MLG Part #: F80033-8 Supplier: 81205
SPL-13610	Scraper Ring Plunger, C32017-21 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)
STD-1140	Hose - Flexible, 1/2 Inch ID, BMS 3-11 Resistant, 10 Foot

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D. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
20	Scraper ring	32-11-21-03A-100	LOM ALL

F. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

G. Prepare for the Replacement

SUBTASK 32-11-21-910-001

> **WARNING** MAKE SURE THAT THE GROUND LOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE GROUND LOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES, PAGEBLOCK 32-00-01/201.

SUBTASK 32-11-21-730-001

(2) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805

SUBTASK 32-11-21-730-002

(3) Operate the brakes eight times to remove pressure from the brake accumulator.

SUBTASK 32-11-21-580-008

(4) Set the wing jacks correctly to keep the airplane level prior to deflating the Main Landing Gear (MLG) shock strut [1] (TASK 07-11-01-580-815).

NOTE: The airplane is to be lifted further in a subsequent step.

SUBTASK 32-11-21-760-001

(5) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
B	16	C01346	LANDING GEAR PARKING BRAKE
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

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(Continued)

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

H. Scraper Ring Replacement

SUBTASK 32-11-21-610-001

> **WARNING** DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(1) Deflate the shock strut [1] for the main landing gear:

(a) Remove the cap [2] for the gas valve [3].

(b) Loosen the swivel nut [4] a maximum of two turns.

NOTE: Fluid in the shock strut [1] will have bubbles when you release the pressure. Deflate the shock strut [1] slowly to prevent the leakage of the fluid through the gas valve [3].

(c) Loosen the swivel nut [4] fully when all of the pressure in the shock strut [1] is released.

SUBTASK 32-11-21-610-002

(2) Drain the oil from the shock strut [1] for the main landing gear:

(a) Remove the cap [5] from the oil oil charging valve [6].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110 in a position to catch the shock strut fluid when the oil charging valve [6] is opened.

(c) Install the drain equipment on the oil charging valve [6]:

1) Install the landing gear shock strut drain valve, SPL-1829 on the oil charging valve [6] to drain the shock strut [1].

2) If you wish to drain the shock strut [1] with a quicker method, do the steps that follow:

a) Cut a length of plastic ten foot hose (1/2 inch ID), STD-1140, long enough to reach the container on the floor.

b) Insert a small allen wrench in the end of the length of tubing, such that the end of the long part of the allen wrench is flush with the end of the tube and the short part penetrates the side wall of the tube.

c) Install the ten foot hose (1/2 inch ID), STD-1140 on the oil charging valve [6] such that the allen wrench goes into the charging valve and holds it open to drain the hydraulic fluid.

(d) Remove the drain equipment when you have removed all of the shock strut oil.

SUBTASK 32-11-21-020-035

(3) Do this task: Main Landing Gear Torsion Link Disconnection, TASK 32-11-51-020-801

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SUBTASK 32-11-21-020-036

(4) Use rope to hold the disconnected end of the upper torsion link and attach it to the outer cylinder [8].

NOTE: This step will hold the upper torsion link in its position when you do the subsequent steps.

SUBTASK 32-11-21-580-009

(5) Lift the airplane until there is about five inches of chrome exposed on the inner cylinder [12] after the gland nut [19] has been removed, do this task: Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801

SUBTASK 32-11-21-020-037

(6) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

NOTE: This procedure will also remove the wheel and the tire assemblies. Also, this will give better access to the inner and outer cylinders.

SUBTASK 32-11-21-580-010

(7) Use axle jack to hold the inner cylinder [12] in its position in the outer cylinder [8], do this task: Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801

SUBTASK 32-11-21-020-038

(8) Remove the gland nut [19]:

(a) Remove the bolts [26], washers [25], and nuts [24] for the plate [23] to release the gland nut [19].

(b) Wind a cloth around the chrome surface of the inner cylinder [12].

NOTE: This will prevent damage to the inner cylinder [12] when the gland nut [19] moves down.

(c) Use the gland nut wrench adapter, SPL-10997 to remove the gland nut [19] from the outer cylinder [8].

1) Loosen the gland nut [19] until it is disconnected from the outer cylinder [8].

NOTE: Do not move the gland nut down the inner cylinder [12].

(d) Lower the axle jack until the gland nut [19] is approximately 3 in. (7.6 cm) below the outer cylinder [8].

SUBTASK 32-11-21-020-039

(9) Remove the damaged scraper ring [20]; do not damage the inner cylinder [12] in the removal process.

(10) Install the wave cut split scraper ring [20] using plunger, C32017-21, SPL-13610 into the gland nut [19].

SUBTASK 32-11-21-400-001

WARNING

DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(11) Apply a thin layer of corrosion inhibiting material, G50136 (preferred) or corrosion preventive Cor-Ban 27L Compound, G50237 (alternate) to these items:

(a) The threads and thread reliefs of the bolts [26].

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(b) The threads of the nuts [24].

(c) The splines and faces of the washers [25].

(12) Apply a thick layer of corrosion preventive Cor-Ban 27L Compound, G50237 to these components:

(a) The gland nut [19] thread major and minor diameters.

(b) The mating outer cylinder [8] thread major and minor diameters.

(c) The outer cylinder [8] thread relief.

SUBTASK 32-11-21-160-009

WARNING	DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(13) Remove all unwanted corrosion inhibiting material, G50136, or corrosion preventive Cor-Ban 27L Compound, G50237.

SUBTASK 32-11-21-400-002

(14) Install the gland nut [19]:

(a) Move the gland nut [19] up to the outer cylinder [8] and engage the gland nut [19] threads.

(b) Use the gland nut wrench adapter, SPL-10997 to torque the gland nut [19] to 125 ft-lb (169 N·m) – 150 ft-lb (203 N·m).

SUBTASK 32-11-21-400-003

(15) Install the plate [23] for the gland nut [19]:

(a) Install theplate [23] in the holes which will put the tab of the plate [23] as close to a slot in the gland nut [19] as possible.

NOTE: If it is necessary, loosen the gland nut [19] a small amount to help with the alignment.

(b) Install the bolts [26], washers [25] and nuts [24].

(c) Apply compound, A00226, (Figure 801), View B-B.

NOTE: Apply it to make sure the seal made by the compound, A00226, will break if the bolts [26] are loosened.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-21-020-041

(1) Remove the rope that holds the disconnected end of the upper torsion link to the outer cylinder [8].

SUBTASK 32-11-21-400-007

(2) Do this task: Main Landing Gear Torsion Link Connection, TASK 32-11-51-400-803.

SUBTASK 32-11-21-400-004

(3) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: This procedure will also install the wheel and tire assemblies.

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SUBTASK 32-11-21-580-011

(4) Remove the axle jack (Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801).

SUBTASK 32-11-21-580-012

(5) Lower the airplane and remove the jacks, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816

SUBTASK 32-11-21-400-006

(6) Install the oil valve cap [5] loosely.

SUBTASK 32-11-21-610-003

(7) Do this task: Main Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-31-610-802

SUBTASK 32-11-21-710-001

(8) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
B	16	C01346	LANDING GEAR PARKING BRAKE
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

END OF TASK

TASK 32-11-21-200-801

5. Main Landing Gear Shock Strut Seal Leakage Check

A. General

(1) This task gives the instructions to make sure that a shock strut is serviceable when you find fluid leakage on the inner cylinder. This task requires a repeated wipe and observing period in order to determine if there is leakage.

NOTE: The presence of a fluid film on the inner cylinder after landings is normal. For new landing gear, overhauled landing gear or when a seal change occurred, it is usual to have hydraulic fluid streaks on the shock strut during the initial landing cycles. These streaks are caused by the hydraulic fluid applied to the shock strut seals during seal installation and will stop after more landing cycles occur. The fluid film is different from the actual continuous drips that are the indication of shock strut seal leakage.

B. References

Reference	Title
05-51-01-210-801	Phase IA Inspection (P/B 201)
09-11-00-580-801	Maintenance Towing (P/B 201)

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(Continued)

Reference	Title
12-15-31-610-801	Main Landing Gear Shock Strut Fluid Check (P/B 301)
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
143	Area Below Aft Cargo Compartment - Left
144	Area Below Aft Cargo Compartment - Right
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

D. Shock Strut Seal Leak Inspection

NOTE: If the inspection finds a fault on the scraper ring you will have to replace the damaged scraper ring.

NOTE: The inner cylinder must be removed from the outer cylinder shock strut to replace the scraper ring.

SUBTASK 32-11-21-480-009

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-21-210-001

(2) Inspect the shock struts for leakage.

NOTE: A small quantity of hydraulic fluid that is isolated to the movable surface of the inner cylinder is not leakage.

SUBTASK 32-11-21-210-002

(3) If you find leakage of the shock strut fluid on the inner cylinder, do the steps that follow to make sure that the shock strut is serviceable:

(a) Check for leaks for 5 minutes:

1) Wipe the surface of the inner cylinder with a clean cloth to remove all of the fluid from the leak.

2) Monitor the inner cylinder where it meets the outer cylinder for 5 minutes.

NOTE: The extension of the inner cylinder must not change during this time.

3) Make a record of the location and the number of drops which come from the seals during the 5 minutes.

(b) Jack the inner gear cylinder by the gear jack pad or tow the airplane to cause movement between the inner cylinder and the outer cylinder. To tow the airplane, do this task: Maintenance Towing, TASK 09-11-00-580-801.

NOTE: If towed, the minimum distance the airplane must be moved is two airplane lengths.

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(c) Check for leaks for 5 minutes:

1) Wipe the surface of the inner cylinder with a clean cloth to remove all of the fluid from the leak.

2) Monitor the inner cylinder where it meets the outer cylinder for 5 minutes.

NOTE: The extension of the inner cylinder must not change during this time.

3) Make a record of the location and the number of drops which come from the seals during the 5 minutes.

(d) Calculate the average of the number of drops which came from the seals during both of the 5 minute measurements.

SUBTASK 32-11-21-210-003

(4) If the leakage stopped, do the steps that follow:

(a) Continue to monitor the strut for leakage on subsequent landings.

1) If you see more signs of leakage, do the entire leak check procedure again.

NOTE: If you find a continuous leakage flow on subsequent landings the shock strut is not serviceable.

CAUTION	IF THE AIRPLANE MADE A LANDING WITH A DEFLATED OR FLAT STRUT, DO THE HARD LANDING INSPECTION. MAKE SURE THAT NO DAMAGE OCCURRED. A DEFLATED OR FLAT STRUT CAN CAUSE DAMAGE DURING A LANDING.

(b) If you do not find leakage on subsequent landings, examine the fluid level of the shock strut within 5 days or 15 flight cycles, do this task: Main Landing Gear Shock Strut Fluid Check, TASK 12-15-31-610-801.

NOTE: If the leakage has stopped, there is no additional action necessary.

1) If the shock strut is deflated or flat, do this task: Phase IA Inspection, TASK 05-51-01-210-801.

SUBTASK 32-11-21-210-004

(5) If there was leakage but the average was less than 50 drops during the two 5 minute periods, do the steps that follow:

NOTE: 20 drops is equal to 1.0 cc.

(a) Continue to monitor the strut for leakage on subsequent landings.

NOTE: If the leakage has stopped and the fluid level is correct, there is no additional action necessary.

NOTE: If the leakage continues or increases, do the entire seal check again.

1) If you do not find leakage on subsequent landings, examine the fluid level of the shock strut within 3 days or 10 flight cycles, do this task: Main Landing Gear Shock Strut Fluid Check, TASK 12-15-31-610-801.

CAUTION	IF THE AIRPLANE MADE A LANDING WITH A DEFLATED OR FLAT STRUT, DO THE HARD LANDING INSPECTION. MAKE SURE THAT NO DAMAGE OCCURRED. A DEFLATED OR FLAT STRUT CAN CAUSE DAMAGE DURING A LANDING.

(b) If the leakage continues or increases, continue to monitor the fluid level of the shock strut at no more than 5 day or 15 flight cycle intervals, until you replace the seals (TASK 12-15-31-610-802).

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SUBTASK 32-11-21-210-005

(6) If the average leakage was more than 50 drops during the two 5 minute periods, but was not continuous, do the steps that follow:

NOTE: 20 drops is equal to 1.0 cc.

CAUTION	IF THE AIRPLANE MADE A LANDING WITH A DEFLATED OR FLAT STRUT, DO THE HARD LANDING INSPECTION. MAKE SURE THAT NO DAMAGE OCCURRED. A DEFLATED OR FLAT STRUT CAN CAUSE DAMAGE DURING A LANDING.

(a) Do this task: Main Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-31-610-802.

1) If the shock strut is deflated or flat, do this task: Phase IA Inspection, TASK 05-51-01-210-801.

(b) Continue to monitor the fluid level of the shock strut after each flight until you replace the seals.

SUBTASK 32-11-21-210-006

(7) If the fluid leaked continuously during the 5 minute period, the shock strut is not serviceable and you must replace the shock strut seals.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR CORROSION PREVENTION - MAINTENANCE PRACTICES

1. General

A. The main landing gear fittings, especially at the attachment lugs, have been found susceptible to corrosion. Damaged paint finishes and plating are attributed to exposure to the weather elements and runway debris. Service wear and hard landings contribute to galling of lugs and lug faces.

B. Specific corrosion problems have been encountered with the aft center door hinge connecting the inner and center door. Corrosion has been attributed to the accumulation of debris in the recessed area of the attachments to the center door.

C. Damaged finishes on the outboard aft lug of the main landing gear upper strut could contribute to stress corrosion cracking of the steel strut.

D. Cracks and damaged finishes have been reported on the upper torsion link pins. Cracking is attributed to stress corrosion.

E. Corrosion and flaking or missing chrome can be on the torsion link pins.

F. Stress corrosion cracking has been reported on the MLG brake assembly shear studs. Cracked or broken attaching shear studs will reduce the structural integrity of the brake attaching assembly.

TASK 32-11-37-600-801

2. CORROSION PREVENTION

A. Consumable Materials

Reference	Description	Specification
G00009	Compound - Organic Corrosion Inhibiting	BMS3-23

B. General Philosophy

SUBTASK 32-11-37-610-004

(1) The basic corrosion prevention philosophy is to make periodic inspections to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or discolored deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

SUBTASK 32-11-37-210-001

(2) After the suspected areas are cleaned, a thorough inspection helps to ensure that protective finishes provided during manufacture remain intact.

SUBTASK 32-11-37-210-002

(3) Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads of joint edges), refer to Structural Repair Manual for details of corrosion removal.

SUBTASK 32-11-37-210-003

(4) For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by the application of a corrosion inhibiting compound into the affected area to slow the corrosion process. The finish system should be restored at the next maintenance opportunity.

C. Prevention Treatment

SUBTASK 32-11-37-610-001

(1) Do these steps for prevention treatment:

(a) At the next maintenance opportunity, corrosion prevention treatment should be accomplished to the main landing gear.

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CAUTION	DO NOT APPLY CORROSION INHIBITING COMPOUND ON GREASED JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

(b) After application of corrosion inhibiting compound, G00009 all grease fittings in the treated areas should be regreased.

NOTE: Apply corrosion inhibiting compound, G00009, to exposed outer surfaces only. Do not disassemble parts to apply the corrosion inhibiting compound. Do not spray into joints, linkages, pulleys, cables or bearings.

(c) If you cleaned with high pressure water, apply the corrosion inhibitor again.

NOTE: Make sure that the pressure of the water is not more than 50 psi.

(d) Shock Struts (Oleo). Apply water displacing corrosion inhibiting compound, G00009 to exterior areas of the inner and outer cylinder with broken finish systems. All lugs, lug faces, connecting pin fasteners, and strut door attachments should be sprayed with corrosion inhibitor.

(e) Axles. Apply water displacing corrosion inhibiting compound, G00009 to outside surfaces of the axles except journal and bearing surfaces. Make suitable nozzle extension and spray the inside surfaces of the axles with corrosion inhibiting compound, G00009 after protecting electrical wire and connectors.

(f) Side Struts. Apply water displacing corrosion inhibiting compound, G00009 to surface areas with broken finish systems on both the upper and lower side struts. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibiting compound, G00009.

(g) Walking Beam. Apply water displacing corrosion inhibiting compound, G00009 to surface areas with broken finish systems.

(h) Door Hinges. Remove debris from recessed areas of door and apply water displacing corrosion inhibiting compound, G00009 to all hinge fittings. Relubricate hinge pins as necessary after application of corrosion inhibiting compound, G00009.

(i) Miscellaneous. Lugs, lug faces and connecting pins of links, actuators and lock mechanisms connecting above mentioned components should also be sprayed with corrosion inhibiting compound, G00009.

(j) The installation of mylar tape under corrosion resistant steel clamps is recommended at overhaul to minimize risk of galvanic corrosion should the finish be damaged.

D. Frequency of Application

SUBTASK 32-11-37-610-003

(1) Frequency of corrosion prevention application is as follows:

(a) Periodic inspection is required to areas identified as susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrence.

(b) Annual application of corrosion inhibiting compound, G00009 is necessary to areas identified or as required by washing cycles.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PREVENTIVE MAINTENANCE LANDING GEAR

NOTE:

APPLY CORROSION INHIBITING COMPOUND (CIC) BMS3-23, TO EXPOSED OUTER SURFACES ONLY. DO NOT DISASSEMBLE PARTS TO APPLY CIC. DO NOT SPRAY INTO JOINTS, LINKAGES, PULLEYS, CABLES OR BEARINGS.

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Main Landing Gear Corrosion Prevention
Figure 201/32-11-37-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 APPLY BMS 3-23 TO THESE AREAS.

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Main Landing Gear Corrosion Prevention
Figure 201/32-11-37-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D-D

E-E

1 APPLY BMS 3-23 TO THESE AREAS.

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Main Landing Gear Corrosion Prevention
Figure 201/32-11-37-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR TORSION LINKS - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the upper torsion link from the main landing gear

(2) A removal of the lower torsion link from the main landing gear

(3) The disconnection of the torsion links for the main landing gear

(4) An installation of the upper torsion link for the main landing gear

(5) An installation of the lower torsion link for the main landing gear

(6) The connection of the torsion links for the main landing gear.

TASK 32-11-51-000-801

2. Main Landing Gear Upper Torsion Link Removal

(Figure 401)

A. General

(1) This task includes the steps to remove the upper torsion link.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-81-000-801	Main Landing Gear Shimmy Damper Removal (P/B 401)
32-45-11-000-801	Main Landing Gear Wheel and Tire Assembly Removal (P/B 401)

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-51-480-008

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-51-020-014

(2) Do this task: Main Landing Gear Shimmy Damper Removal, TASK 32-11-81-000-801.

SUBTASK 32-11-51-020-001

(3) Remove the left hand inboard or the right hand outboard tire of the main landing gear, do this task: Main Landing Gear Wheel and Tire Assembly Removal, TASK 32-45-11-000-801.

E. Main Landing Gear Upper Torsion Link Removal

SUBTASK 32-11-51-020-002

(1) Remove the support brackets [4] from the upper torsion link [5].

NOTE: It is necessary to remove support brackets with the sensor targets attached.

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(a) Remove the nuts [2] and washers [3] from the bolts [1].

(b) Remove the bolts [1] that attach the support brackets [4] to the upper torsion link [5].

(c) Remove the washers [6] from the bolts [1].

(d) Remove the support brackets [4] from the work area.

SUBTASK 32-11-51-020-003

(2) Remove the bracket [19] from the upper torsion link [5].

NOTE: It is necessary to remove the bracket with the electrical conduit and clamps attached.

(a) Remove the nuts [10] and washers [9] from the bolts [7].

(b) Remove the bolts [7] to disconnect the aft side of the bracket [19] from the upper torsion link [5].

(c) Remove the washers [8] from the bolts [7].

(d) Remove the nut [14] and washer [13] from the bolt [21].

(e) Remove the bolt [21] to disconnect the forward side of the bracket [19] from the upper torsion link [5].

NOTE: Removal of the bolt will also disconnect one side of the hose guide bracket from the upper torsion link.

(f) Remove the washer [20] from the bolt [21].

(g) Isolate the bracket [19] from the upper torsion link [5].

SUBTASK 32-11-51-020-004

(3) Remove the hose guide bracket [12] from the upper torsion link [5].

NOTE: It is necessary remove the bracket with the hose guides and brake hoses attached.

(a) Remove the nut [15] and washer [16] from the bolt [18].

(b) Remove the bolt [18] to disconnect the hose guide bracket [12] from the upper torsion link [5].

(c) Remove the washer [17] from the bolt [18].

(d) Isolate the hose guide bracket [12] from the upper torsion link [5].

SUBTASK 32-11-51-480-002

(4) Use a rope to hold the forward side of the lower torsion link [22] to the outer cylinder [33].

NOTE: This will hold the lower torsion link in its position when you do the subsequent steps.

SUBTASK 32-11-51-420-001

(5) Disconnect the upper torsion link [5] and lower torsion link [22].

(a) Remove the cotter pin [26], nut [27], and washers [25] from the bolt [23].

(b) Remove the bolt [23] from the apex pin [31].

(c) Remove the apex nut [24] from the apex pin [31].

(d) Remove the bracket [28], washer [29], and tapered sleeve [54] from the apex pin [31].

(e) Isolate the bracket [28] from the apex joint.

NOTE: It is necessary to isolate the bracket with the electrical conduit and the clamps attached.

(f) Remove the apex pin [31] to disconnect the upper torsion link [5] from the lower torsion link [22].

(g) Remove the spacer [30] between the upper torsion link [5] and lower torsion link [22].

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SUBTASK 32-11-51-020-005

(6) Disconnect the upper torsion link [5] from the outer cylinder [33].

(a) Remove the cotter pin [38], nut [39], and washer [37] from the bolt [35].

(b) Remove the bolt [35] from the upper torsion pin [32].

(c) Remove the nut [36] and washer [34] from the upper torsion pin [32].

(d) Hold the upper torsion link [5] and remove the upper torsion pin [32] to disconnect the upper torsion link [5] from the outer cylinder [33].

(e) Remove the upper torsion link [5] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Torsion Link Installation
Figure 401/32-11-51-990-803 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Torsion Link Installation
Figure 401/32-11-51-990-803 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Torsion Link Installation
Figure 401/32-11-51-990-803 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Torsion Link Installation
Figure 401/32-11-51-990-803 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Torsion Link Installation
Figure 401/32-11-51-990-803 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-51-000-802

3. Main Landing Gear Lower Torsion Link Removal

(Figure 401)

A. General

(1) This task includes the steps to remove the lower torsion link.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-81-000-801	Main Landing Gear Shimmy Damper Removal (P/B 401)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-51-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-51-020-015

(2) Do this task: Main Landing Gear Shimmy Damper Removal, TASK 32-11-81-000-801.

SUBTASK 32-11-51-020-006

(3) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

E. Main Landing Gear Lower Torsion Link Removal

SUBTASK 32-11-51-020-007

(1) Remove the bracket [42] and bracket [44] from the lower torsion link [22].

NOTE: It is necessary to remove the bracket with the electrical conduit attached.

(a) Remove the nuts [46] and washers [45] from the bolts [40].

(b) Remove the bolts [40] and washers [41] that attach the bracket [42] and bracket [44] to the lower torsion link [22].

(c) Remove the bracket [44] and spacer [43] from the lower torsion link [22].

(d) Isolate the bracket [42] from the lower torsion link [22].

SUBTASK 32-11-51-480-004

(2) Use a rope to hold the forward side of the upper torsion link [5] to the outer cylinder [33].

NOTE: This step will hold the upper torsion link in its position when you do the subsequent steps.

SUBTASK 32-11-51-420-002

(3) Disconnect the upper torsion link [5] and lower torsion link [22].

(a) Remove the cotter pin [26], nut [27], washers [25], and bolt [23] from the apex pin [31].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the apex nut [24] from the apex pin [31].

(c) Remove the bracket [28], washer [29], and tapered sleeve [54] from the apex pin [31].

(d) Isolate the bracket [28] from the apex joint.

NOTE: It is necessary to isolate the bracket with the electrical conduit and the clamps attached.

(e) Remove the apex pin [31] to disconnect the upper torsion link [5] from the lower torsion link [22].

(f) Remove the spacer [30] between the upper torsion link [5] and lower torsion link [22].

SUBTASK 32-11-51-020-008

(4) Disconnect the lower torsion link [22] from the inner cylinder [47].

(a) Remove the cotter pin [48], nut [49], and washer [50] from the cross bolt [52].

(b) Remove the cross bolt [52] that attaches the lower torsion link pin [51] to the spacer [53].

(c) Hold the lower torsion link [22] and remove the lower torsion link pin [51] to disconnect the lower torsion link [22] from the inner cylinder [47].

SUBTASK 32-11-51-480-005

(5) Use a rope to hold the spacer [53] to the inner cylinder [47].

NOTE: This will hold the spacer in its position when you remove and install the lower torsion link.

——— END OF TASK ———

TASK 32-11-51-020-801

4. Main Landing Gear Torsion Link Disconnection

(Figure 401)

A. General

(1) This task includes the steps to disconnect the torsion links.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-81-000-801	Main Landing Gear Shimmy Damper Removal (P/B 401)

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for Disconnection

SUBTASK 32-11-51-480-006

WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

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SUBTASK 32-11-51-020-016

(2) Do this task: Main Landing Gear Shimmy Damper Removal, TASK 32-11-81-000-801.

E. Main Landing Gear Torsion Link Disconnection

SUBTASK 32-11-51-420-003

(1) Disconnect the upper torsion link [5] and lower torsion link [22].

(a) Remove the cotter pin [26], nut [27], washers [25], and bolt [23] from the apex pin [31].

(b) Remove the apex nut [24] from the apex pin [31].

(c) Remove the bracket [28], washer [29], and tapered sleeve [54] from the apex pin [31].

(d) Isolate the bracket [28] from the apex joint.

NOTE: It is necessary to isolate the bracket with the electrical conduit and the clamps attached.

(e) Remove the apex pin [31] to disconnect the upper torsion link [5] from the lower torsion link [22].

(f) Remove the spacer [30] between the upper torsion link [5] and lower torsion link [22].

END OF TASK

TASK 32-11-51-400-801

5. Main Landing Gear Upper Torsion Link Installation

(Figure 401)

A. General

(1) This task includes the steps to install the upper torsion link.

B. References

Reference	Title
12-21-11-640-802	Main Landing Gear Lower End Components Servicing (P/B 301)
32-11-81-400-801	Main Landing Gear Shimmy Damper Installation (P/B 401)
32-45-11-400-801	Main Landing Gear Wheel and Tire Assembly Installation (P/B 401)

C. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Upper torsion link	32-11-51-04A-110	LOM ALL
26	Pin	32-11-81-01-020	LOM ALL
38	Pin	32-11-51-04A-010	LOM ALL

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E. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Main Landing Gear Upper Torsion Link Installation

SUBTASK 32-11-51-620-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(1) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The face common to spacer [30] on the upper torsion link [5].

(b) The threads, thread reliefs and faces of bolt [23], washers [25], and nut [27].

(c) The pin shank, threads, thread reliefs and faces of the apex pin [31], washer [29], and apex nut [24].

(d) The inside diameter of spacer [30] and tapered sleeve [54].

(e) The faces, threads and thread reliefs of washer [34], nut [36], bolt [35], washer [37], and nut [39].

(f) The cotter pin [26] and cotter pin [38].

SUBTASK 32-11-51-160-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(2) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136.

SUBTASK 32-11-51-640-001

(3) Apply grease, D00633, to the following parts and areas:

(a) Apply to the outside diameter of the tapered sleeve [54] and upper torsion pin [32].

SUBTASK 32-11-51-160-002

(4) Remove all unwanted grease, D00633.

SUBTASK 32-11-51-420-004

(5) Connect the upper torsion link [5] to the outer cylinder [33].

(a) Put the upper torsion link [5] in its position on the clevis of the outer cylinder [33].

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(b) Put the upper torsion pin [32] through the upper torsion link [5] and clevis of the outer cylinder [33].

(c) Install the washer [34] and nut [36] on the upper torsion pin [32].

(d) Tighten the nut [36] to 95 ft-lb (129 N·m) - 115 ft-lb (156 N·m).

(e) If it is necessary, loosen the nut [36] to the nearest castellation to align the holes for the bolt [35].

(f) Install the bolt [35] in the upper torsion pin [32].

(g) Install the washer [37] and nut [39] on the bolt [35].

(h) Install the cotter pin [38] in the bolt [35].

1) If it is necessary, loosen the nut [39] to the nearest castellation to align the hole for the cotter pin [38].

(i) Apply compound, A00226, to the nut [39] such that any tampering must cause the seal to break.

SUBTASK 32-11-51-080-001

(6) Remove the rope that holds the lower torsion link [22] in its position to the outer cylinder [33].

SUBTASK 32-11-51-420-005

(7) Connect the upper torsion link [5] and lower torsion link [22].

(a) Align the apex holes in the upper torsion link [5] and lower torsion link [22].

(b) Put the spacer [30] in its position between the upper torsion link [5] and lower torsion link [22].

(c) Put the apex pin [31] through the upper torsion link [5], spacer [30], and lower torsion link [22].

CAUTION	MAKE SURE THAT YOU INSTALL THE SLEEVES IN THE CORRECT LOCATIONS. IF YOU INSTALL THE SLEEVES IN THE INCORRECT LOCATIONS, VIBRATION CAN CAUSE DAMAGE TO COMPONENTS OF LANDING GEAR.

(d) Install the tapered sleeve [54] in the lower torsion link [22], washer [29], and bracket [28] on the apex pin [31].

NOTE: There may be a gap between the torsion link and apex joint. This condition is part of a normal shimmy damper installation.

NOTE: The shimmy damper installation has a straight sleeve and tapered sleeve. The straight sleeve is longer than the tapered sleeve.

(e) Install the apex nut [24] on the apex pin [31].

(f) Make sure that the electrical conduit and apex nut [24] do not contact one another.

1) Make sure that the electrical conduit is at an angle of 50 +0/-5 degrees from the bottom of the bracket [28].

2) Make sure that the nut [55] is tightened to 70 ±5 in-lb (8 ±1 N·m).

(g) Tighten the apex nut [24] to 50 ft-lb (67.8 N·m) - 58 ft-lb (78.6 N·m).

1) Advance the apex nut [24] to the nearest castellation that aligns with the hole in the apex pin [31].

a) Make sure that the final torque is not more than 150 ft-lb (203 N·m).

(h) Install the retention bolt [23] through the apex nut [24] and apex pin [31].

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(i) Install the washers [25] and nut [27] on the bolt [23].

(j) Install the cotter pin [26] in the bolt [23].

1) If it is necessary, loosen the nut [27] to the nearest castellation to align the hole for the cotter pin [26].

(k) Apply compound, A00226, to the nut [27] to prevent damage to the seal.

SUBTASK 32-11-51-420-006

(8) Connect the hose guide bracket [12] to the upper torsion link [5].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(a) Apply a thin layer of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to the bolt [18], washer [16], washer [17], and nut [15].

(b) Install the washer [17] on the bolt [18].

(c) Put the hose guide bracket [12] in its position below the upper torsion link [5].

(d) Put the spacer [11] in its position between the hose guide bracket [12] and upper torsion link [5].

(e) Put the bolt [18] through the upper torsion link [5], spacer [11], and hose guide bracket [12].

NOTE: This will connect one side of the hose guide bracket to the upper torsion link.

(f) Install the washer [16] and nut [15] on the bolt [18].

SUBTASK 32-11-51-420-007

(9) Connect the bracket [19] to the upper torsion link [5].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

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(WARNING PRECEDES)

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(a) Apply a thin layer of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to the bolt [7], bolt [21], washer [8], washer [9], washer [13], washer [20], nut [10], and nut [14].

(b) Install the washers [8] on the bolts [7].

(c) Put the bracket [19] in its position on the upper torsion link [5].

(d) Put the bolt [7] through the bracket [19] and upper torsion link [5].

NOTE: This will connect the aft side of the bracket to the upper torsion link.

(e) Install the washers [9] and nuts [10] on the bolts [7].

(f) Install the washer [20] on the bolt [21].

(g) Put the bolt [21] through the bracket [19], upper torsion link [5], spacer [11], and hose guide bracket [12].

(h) Install the washer [13], and nut [14] on the bolt [21].

SUBTASK 32-11-51-390-001

(10) Fay seal the spacer [11] with sealant, A00247.

SUBTASK 32-11-51-420-008

(11) Connect the support bracket [4] to the upper torsion link [5].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(a) Apply a thin layer of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to the bolts [1], nuts [2], washer [3], and washers [6].

(b) Install the washers [6] on the bolts [1].

(c) Put the bolts [1] through the upper torsion link [5] and support bracket [4].

(d) Install the washers [3] and nuts [2] on the bolts [1].

SUBTASK 32-11-51-420-018

(12) Do this task: Main Landing Gear Shimmy Damper Installation, TASK 32-11-81-400-801.

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G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-51-640-002

(1) For the grease fittings on the upper torsion link [5] and lower torsion link [22], do this task Main Landing Gear Lower End Components Servicing, TASK 12-21-11-640-802.

SUBTASK 32-11-51-420-009

(2) Install the left hand inboard or the right hand outboard tire of the main landing gear, do this task: Main Landing Gear Wheel and Tire Assembly Installation, TASK 32-45-11-400-801.

——— END OF TASK ———

TASK 32-11-51-400-802

6. Main Landing Gear Lower Torsion Link Installation

(Figure 401)

A. General

(1) This task includes the steps to install the lower torsion link.

B. References

Reference	Title
12-21-11-640-802	Main Landing Gear Lower End Components Servicing (P/B 301)
32-11-81-400-801	Main Landing Gear Shimmy Damper Installation (P/B 401)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)

C. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
22	Lower torsion link	32-11-51-04A-115	LOM ALL
26	Pin	32-11-81-01-020	LOM ALL
48	Pin	32-11-51-04A-015	LOM ALL

E. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Main Landing Gear Lower Torsion Link Installation

SUBTASK 32-11-51-620-002

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

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(WARNING PRECEDES)

> **CAUTION**
> DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(1) Apply a thin layer of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The threads of the bolts [23].

(b) The threads of the apex nut [24], nuts [27], and nuts [49].

(c) The faces of the washers [25], tapered sleeve [54], washers [29], and washers [50].

(d) The cotter pin [26].

SUBTASK 32-11-51-160-003

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(2) Remove any excess of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136.

SUBTASK 32-11-51-640-003

(3) Lubricate the chrome plated surfaces of the apex pin [31], lower torsion link pin [51], and cross bolt [52] with grease, D00633.

SUBTASK 32-11-51-160-004

(4) Remove all unwanted grease, D00633.

SUBTASK 32-11-51-080-002

(5) Remove the rope that holds the spacer [53] to the inner cylinder [47].

SUBTASK 32-11-51-420-010

(6) Connect the lower torsion link [22] to the inner cylinder [47].

(a) Put the lower torsion link [22] in its position on the inner cylinder [47].

(b) Put the lower torsion link pin [51] through the clevis on the inner cylinder [47] and spacer [53].

(c) Align the hole in the lower torsion link pin [51] with hole in the spacer [53] for the installation of the cross bolt [52].

(d) Put the cross bolt [52] through the spacer [53] and lower torsion link pin [51].

(e) Install the washer [50] and nut [49] on the cross bolt [52].

(f) Tighten the nut [49] to 160 in-lb (18 N·m) - 190 in-lb (21 N·m).

(g) Install the cotter pin [48] in the cross bolt [52].

1) If it is necessary, loosen the nut [49] to the nearest castellation to align the hole for the cotter pin [48].

SUBTASK 32-11-51-080-003

(7) Remove the rope that holds the upper torsion link [5] to the outer cylinder [33].

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SUBTASK 32-11-51-420-011

(8) Connect the upper torsion link [5] and lower torsion link [22].

(a) Align the apex holes in the upper torsion link [5] and lower torsion link [22].

(b) Put the spacer [30] in its position between the upper torsion link [5] and lower torsion link [22].

(c) Put the apex pin [31] through the upper torsion link [5], spacer [30], and lower torsion link [22].

CAUTION	MAKE SURE THAT YOU INSTALL THE SLEEVES IN THE CORRECT LOCATIONS. IF YOU INSTALL THE SLEEVES IN THE INCORRECT LOCATIONS, VIBRATION CAN CAUSE DAMAGE TO COMPONENTS OF LANDING GEAR.

(d) Install the tapered sleeve [54] in the lower torsion link [22], washer [29], bracket [28], and apex nut [24] on the apex pin [31].

NOTE: There may be a gap between the torsion link and apex joint. This condition is part of a normal shimmy damper installation.

NOTE: The shimmy damper installation has a straight sleeve and tapered sleeve. The straight sleeve is longer than the tapered sleeve.

(e) Tighten the apex nut [24] to 50 ft-lb (67.8 N·m) - 58 ft-lb (78.6 N·m).

1) Advance the apex nut [24] to the nearest castellation that aligns with the hole in the apex pin [31].

a) Make sure that the final torque is not more than 150 ft-lb (203 N·m).

(f) Install the retention bolt [23] through the apex nut [24] and apex pin [31].

(g) Make sure that the electrical conduit and apex nut [24] do not contact one another.

1) Make sure that the electrical conduit is at an angle of 50 +0/-5 degrees from the bottom of the bracket [28].

2) Make sure that the nut [55] is tightened to 70 ±5 in-lb (8 ±1 N·m).

(h) Install the washers [25] and nut [27] on the bolt [23].

(i) Install the cotter pin [26] in the bolt [23].

1) If it is necessary, loosen the nut [27] to the nearest castellation to align the hole for the cotter pin [26].

(j) Apply compound, A00226, to the nut [27] such that tampering must cause the seal to break.

SUBTASK 32-11-51-420-020

(9) Do this task: Main Landing Gear Shimmy Damper Installation, TASK 32-11-81-400-801.

SUBTASK 32-11-51-420-012

(10) Connect the bracket [42] and bracket [44] to the lower torsion link [22].

(a) Put bracket [42], bracket [44], and spacer [43] in their position on the lower torsion link [22].

(b) Install the washers [41] on the bolts [40].

(c) Put the bolts [40] through the bracket [42], spacer [43], lower torsion link [22], and bracket [44].

(d) Install the washers [45] and nuts [46] on the bolts [40].

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SUBTASK 32-11-51-420-023

(11) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-51-640-004

(1) For the grease fittings on the upper torsion link [5] and lower torsion link [22], do this task: Main Landing Gear Lower End Components Servicing, TASK 12-21-11-640-802.

——— END OF TASK ———

TASK 32-11-51-400-803

7. Main Landing Gear Torsion Link Connection

(Figure 401)

A. General

(1) This task includes the steps to connect the torsion links.

B. References

Reference	Title
12-21-11-640-802	Main Landing Gear Lower End Components Servicing (P/B 301)
32-11-81-400-801	Main Landing Gear Shimmy Damper Installation (P/B 401)

C. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
26	Pin	32-11-81-01-020	LOM ALL

E. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Main Landing Gear Torsion Link Connection

SUBTASK 32-11-51-620-003

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

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(WARNING PRECEDES)

> **CAUTION**
> DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(1) Apply a thin layer of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The threads of the bolts [23].

(b) The threads of the apex nut [24] and nut [27].

(c) The faces of the tapered sleeve [54], washers [25], and washer [29].

(d) The cotter pin [26].

SUBTASK 32-11-51-160-005

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(2) Remove any excess of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136.

SUBTASK 32-11-51-640-006

(3) Lubricate the chrome plated surfaces of the apex pin [31] with grease, D00633.

SUBTASK 32-11-51-160-006

(4) Remove all unwanted grease, D00633.

SUBTASK 32-11-51-420-022

(5) Do this task: Main Landing Gear Shimmy Damper Installation, TASK 32-11-81-400-801.

SUBTASK 32-11-51-420-013

(6) Connect the upper torsion link [5] and lower torsion link [22].

(a) Align the apex holes in the upper torsion link [5] and lower torsion link [22].

(b) Put the spacer [30] in its position between the upper torsion link [5] and lower torsion link [22].

(c) Put the apex pin [31] through the upper torsion link [5], spacer [30], and lower torsion link [22].

> **CAUTION**
> MAKE SURE THAT YOU INSTALL THE SLEEVES IN THE CORRECT LOCATIONS. IF YOU INSTALL THE SLEEVES IN THE INCORRECT LOCATIONS, VIBRATION CAN CAUSE DAMAGE TO COMPONENTS OF LANDING GEAR.

(d) Install the tapered sleeve [54], washer [29], bracket [28], and apex nut [24] on the apex pin [31].

NOTE: There may be a gap between the torsion link and apex joint. This condition is part of the normal shimmy damper installation.

NOTE: The shimmy damper installation has a straight sleeve and tapered sleeve. The straight sleeve is longer than the tapered sleeve.

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(e) Tighten the apex nut [24] to 50 ft-lb (68 N·m) - 58 ft-lb (79 N·m).

1) Advance the apex nut [24] to the nearest castellation that aligns with the hole in the apex pin [31].

a) Make sure that the final torque is not be more than 150 ft-lb (203 N·m).

(f) Install the retention bolt [23] through the apex nut [24] and apex pin [31].

(g) Make sure that the electrical conduit and the apex nut [24] do not contact one another.

1) Make sure that the electrical conduit is at an angle of 50 +0/-5 degrees from the bottom of the bracket [28].

2) Make sure that the nut [55] is tightened to 70 ±5 in-lb (8 ±1 N·m).

(h) Install the washers [25] and nut [27] on the bolt [23].

(i) Install the cotter pin [26] in the bolt [23].

1) If it is necessary, loosen the nut [27] to the nearest castellation to align the hole for the cotter pin [26].

(j) Apply compound, A00226, to the nut [27] such that any tampering must cause the seal to break.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-51-640-005

(1) For the grease fittings on the upper torsion link [5] and lower torsion link [22], do this task: Main Landing Gear Lower End Components Servicing, TASK 12-21-11-640-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR TORSION LINKS - INSPECTION/CHECK

1. General

A. This task supplies the data for a dimensional inspection of the torsion links for the main landing gear.

B. This task does not remove or install the torsion links. Refer to the Main Landing Gear Torsion Links - Removal/Installation for procedures to remove and install the torsion links of the main landing gear.

TASK 32-11-51-200-801

2. Main Landing Gear Torsion Links Inspection

(Figure 601)

A. General

(1) This procedure gives wear limits and repair data for the torsion links on the main landing gear.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-51-000-801	Main Landing Gear Upper Torsion Link Removal (P/B 401)
32-11-51-000-802	Main Landing Gear Lower Torsion Link Removal (P/B 401)
32-11-51-400-801	Main Landing Gear Upper Torsion Link Installation (P/B 401)
32-11-51-400-802	Main Landing Gear Lower Torsion Link Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1096	Micrometer - Depth, 0-1 inch, Readable to 1/1000 inch
STD-1097	Caliper - Vernier, 0-6 inch, Readable to 1/1000 inch

D. Location Zones

Zone	Area
713	Nose Landing Gear

E. Procedure

SUBTASK 32-11-51-480-007

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-51-020-010

(2) To remove or to get access to the torsion links of the main landing gear do the tasks that follows Figure 601:

(a) Do this task: Main Landing Gear Upper Torsion Link Removal, TASK 32-11-51-000-801.

(b) Do this task: Main Landing Gear Lower Torsion Link Removal, TASK 32-11-51-000-802.

SUBTASK 32-11-51-020-011

(3) Use these tools to check for wear on the parts of the main landing gear torsion links:

(a) micrometer (0-1 inch, readable to 1/1000 inch), STD-1096

(b) vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097

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SUBTASK 32-11-51-020-012

(4) Examine the parts of the main landing gear torsion links for worn areas:

(a) Remove the parts to be checked.

(b) Measure the parts as necessary with a micrometer (0-1 inch, readable to 1/1000 inch), STD-1096 or a vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

(c) Compare the dimensions you measured with the permitted wear dimensions in (Table 601).

(d) If the parts are not in the tolerance, replace or repair the part as shown in (Table 601).

Table 601/32-11-51-993-803 Wear Limits

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#1 BUSHING	I.D.	1.8764 in (47.660) mm	1.8779 in (47.698) mm	1.8816 in (47.792) mm	0.007 in (0.177) mm
#1 PIN	O.D.	1.8730 in (47.574) mm	1.8740 in (47.599) mm	1.8703 in (47.505) mm	
#2 BUSHING	I.D.	1.8758 in (47.645) mm	1.8773 in (47.683) mm	1.8810 in (47.777) mm	0.007 in (0.177) mm
#2 PIN	O.D.	1.8730 in (47.574) mm	1.8740 in (47.599) mm	1.8703 in (47.505) mm	
#3 BUSHING	I.D.	1.3760 in (34.950) mm	1.3772 in (34.980) mm	1.3810 in (35.077) mm	0.007 in (0.177) mm
#3 PIN	O.D.	1.3725 in (34.861) mm	1.3740 in (34.899) mm	1.3702 in (34.803) mm	
#4 BUSHING	I.D	1.3760 in (34.950) mm	1.3772 in (34.980) mm	1.3810 in (35.077) mm	0.007 in (0.177) mm
#4 PIN	O.D.	1.3725 in (34.861) mm	1.3740 in (34.899) mm	1.3702 in (34.803) mm	
#5 BUSHING	I.D.	1.3760 in (34.950) mm	1.3772 in (34.980) mm	1.3815 in (35.090) mm	0.007 in (0.177) mm
#5 SLEEVE	O.D.	1.3720 in (34.848) mm	1.3740 in (34.899) mm	1.3697 in (34.790) mm	

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 601/32-11-51-993-803 Wear Limits (Continued)

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#6 BUSHING	I.D	1.3760 in (34.950) mm	1.3772 in (34.980) mm	1.3815 in (35.090) mm	0.008 in (0.203) mm
#6 SLEEVE	O.D.	1.3710 in (34.823) mm	1.3730 in (34.874) mm	1.3687 in (34.764) mm	
#7 BUSHING	I.D.	2.5009 in (63.522) mm	2.5024 in (63.560) mm	2.5071 in (63.680) mm	0.008 in (0.203) mm
#7 PIN	O.D.	2.4975 in (63.436) mm	2.4990 in (63.474) mm	2.4943 in (63.355) mm	
#8 BUSHING	I.D.	2.5018 in (63.545) mm	2.5033 in (63.583) mm	2.5080 in (63.703) mm	0.009 in (0.228) mm
#8 PIN	O.D.	2.4975 in (63.436) mm	2.4990 in (63.474) mm	2.4943 in (63.355) mm	
#9 BUSHING	I.D.	2.5016 in (63.540) mm	2.5031 in (63.578) mm	2.5078 in (63.698) mm	0.008 in (0.203) mm
#9 PIN	O.D.	2.4975 in (63.436) mm	2.4990 in (63.474) mm	2.4943 in (63.355) mm	

SUBTASK 32-11-51-020-013

(5) To install the torsion links or parts for the main landing gear do the task that follows:

(a) Do this task: Main Landing Gear Upper Torsion Link Installation, TASK 32-11-51-400-801.

(b) Do this task: Main Landing Gear Lower Torsion Link Installation, TASK 32-11-51-400-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Torsion Wear Limits
Figure 601/32-11-51-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Torsion Wear Limits
Figure 601/32-11-51-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR SIDE STRUT ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the upper side strut for the main landing gear

(2) An installation of the upper side strut for the main landing gear

(3) A removal of the lower side strut from the main landing gear

(4) An installation of the lower side strut on the main landing gear

(5) A removal of the side strut from the main landing gear

(6) An installation of the side strut on the main landing gear.

TASK 32-11-61-000-801

2. Main Landing Gear Upper Side Strut Removal

(Figure 401)

A. General

(1) This task supplies instructions to remove the upper side strut.

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-91-000-801	Main Gear Downlock Springs Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1359	Wrench Adapter, C32029-3 or C32029-93 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1367	Slug Driver, C32029-11 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1368	Thread Protector, C32029-12 or C32029-101 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1369	Thread Protector , C32029-13 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Removal

SUBTASK 32-11-61-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-61-580-004

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-11-61-860-001

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-61-020-001

(4) Do this task: Main Gear Downlock Springs Removal, TASK 32-32-91-000-801.

F. Main Landing Gear Upper Side Strut Removal

SUBTASK 32-11-61-020-002

(1) Disconnect the upper side strut [3] from the downlock strut [1].

(a) Remove the pin [6] from the downlock link pin [2].

(b) Remove the nut [5] and the washer [4] from the downlock link pin [2].

(c) Remove the downlock link pin [2] to disconnect the upper side strut [3] from the downlock strut [1].

NOTE: Use the thread protector, C32029-13, SPL-1369, for the downlock link pin [2] when you do this step.

SUBTASK 32-11-61-020-003

(2) Disconnect the upper side strut [3] from the lower side strut [8].

(a) Remove the cotter pin [13], nut [14], and washer [12] from the bolt [11].

(b) Remove the bolt [11] from the side strut pin [7].

(c) Use a rope to support the upper end of the lower side strut [8] and attach the rope to the outboard side of the reaction link assembly [15].

NOTE: The lower side strut weighs approximately 48.3 lb (21.91 kg).

(d) Remove the end cap [9] from the side strut pin [7].

(e) Remove the side strut pin [7] to disconnect the upper side strut [3] from the lower side strut [8].

NOTE: Use the slug driver, C32029-11, SPL-1367, for the side strut pin [7] when you do this step.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-61-020-004

(3) Disconnect the upper side strut [3] from the reaction link assembly [15].

(a) Remove the pin [19], nut [18], and washer [17] from the cross bolt [16].

(b) Remove the cross bolt [16] from the side strut pin [22].

(c) Remove the side strut nut [20], and the side strut washer [21] from the side strut pin [22].

NOTE: Use wrench adapter, C32029-3 or C32029-93, SPL-1359, to hold the head of the side strut pin [22] when you loosen the side strut nut [20].

(d) Remove the side strut pin [22] that holds the upper side strut [3] to the reaction link assembly [15].

NOTE: Use the thread protector, C32029-12 or C32029-101, SPL-1368, for the side strut pin [22] when you do this step.

SUBTASK 32-11-61-020-005

(4) Lower the upper side strut [3] carefully and remove it from the airplane.

NOTE: The upper side strut weighs approximately 42.8 lb (19.41 kg).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

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Main Landing Gear Upper Side Strut Installation
Figure 401/32-11-61-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Upper Side Strut Installation
Figure 401/32-11-61-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-61-400-801

3. Main Landing Gear Upper Side Strut Installation

(Figure 401)

A. General

(1) This task supplies instructions to install the upper side strut.

B. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-21-11-640-801	Main Landing Gear Upper End Components Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)
32-32-91-400-801	Main Gear Downlock Spring Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1359	Wrench Adapter, C32029-3 or C32029-93 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1368	Thread Protector, C32029-12 or C32029-101 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1369	Thread Protector , C32029-13 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

D. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Upper side strut	32-11-61-01-480	LOM ALL
6	Pin	32-11-61-01-175	LOM ALL
13	Cotter pin	32-11-61-01-464	LOM ALL
19	Pin	32-11-71-01-055	LOM ALL

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F. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

G. Prepare for the Installation

SUBTASK 32-11-61-480-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

H. Main Landing Gear Upper Side Strut Installation

SUBTASK 32-11-61-420-001

(1) Connect the upper side strut [3] to the reaction link assembly [15].

(a) Lubricate the chrome plated surfaces of the side strut pin [22] with grease, D00633.

(b) Remove all unwanted grease, D00633.

(c) Put the upper side strut [3] in its position for connection to the reaction link assembly [15].

(d) Put the side strut pin [22] through the upper side strut [3] and the reaction link assembly [15].

NOTE: Use the thread protector, C32029-12 or C32029-101, SPL-1368, for the side strut pin [22] when you do this step.

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

> **CAUTION** DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces.

1) The threads and thread reliefs of the side strut pin [22] and the cross bolt [16].

2) The threads of the side strut nut [20] and the nut [18].

3) The faces of the side strut washer [21] and the washer [17].

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(f) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(g) Install the side strut washer [21] and the side strut nut [20] on the side strut pin [22].

(h) Tighten the side strut nut [20] to 600 in-lb (67.79 N·m) – 900 in-lb (101.69 N·m).

NOTE: Use the wrench adapter, C32029-3 or C32029-93, SPL-1359, to hold the head of the side strut pin [22] when you tighten the side strut nut [20].

(i) If it is necessary, loosen the side strut nut [20] to the nearest castellation to align the hole for the cross bolt [16].

(j) Install the cross bolt [16] in the side strut pin [22].

(k) Install the washer [17] and the nut [18] on the cross bolt [16].

(l) Tighten the nut [18] to 30 in-lb (3.39 N·m) – 50 in-lb (5.65 N·m).

(m) If it is necessary, loosen the nut [18] to the nearest castellation to align the holes for the new pin [19].

(n) Install the new pin [19] in the cross bolt [16].

SUBTASK 32-11-61-620-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	REMOVE UNWANTED CORROSION-INHIBITING COMPOUND FROM SURFACES WHICH WILL BE LUBRICATED. IF YOU APPLY CORROSION-INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT CAN OCCUR.

(2) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces.

(a) The inside diameter of the side strut pin [7] and the inside unplated surface of the end caps [9].

(b) The threads of the nut [14].

(c) The face of the washer [12].

SUBTASK 32-11-61-160-001

(3) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(a) Make sure that the drainage holes in the end cap [9] are clear of the corrosion preventive Cor-Ban 27L Compound, G50237, after the application.

SUBTASK 32-11-61-620-002

(4) Lubricate the chrome plated surfaces of the side strut pin [7] and the surfaces of the end cap [9] with grease, D00633.

SUBTASK 32-11-61-160-002

(5) Remove all unwanted grease, D00633.

SUBTASK 32-11-61-420-002

(6) Connect the upper side strut [3] to the lower side strut [8].

(a) Remove the rope that supports the lower side strut [8] to the reaction link assembly [15].

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(b) Put the upper side strut [3] in its position for connection to the lower side strut [8].

(c) Put the side strut pin [7] through the upper side strut [3] and the lower side strut [8].

(d) Install the end cap [9] on the side strut pin [7].

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate), to the threads, thread reliefs of the bolt [11] and its shank.

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces.

CAUTION

MAKE SURE THAT THE HEAD OF THE BOLT POINTS IN THE AFT DIRECTION. IF THE HEAD OF THE BOLT POINTS FORWARD, DAMAGE TO COMPONENTS AND THE AIRPLANE STRUCTURE WILL OCCUR.

(f) Install the bolt [11] in the side strut pin [7].

(g) Install the washer [12] and the nut [14] on the bolt [11].

(h) Tighten the nut [14] to 30 in-lb (3.39 N·m) – 50 in-lb (5.65 N·m) more than the run on torque.

(i) If it is necessary, loosen the nut [14] to the nearest castellation to align the hole for the new cotter pin [13].

(j) Install the new cotter pin [13] in the bolt [11].

SUBTASK 32-11-61-420-003

(7) Connect the upper side strut [3] to the downlock strut [1].

(a) Lubricate the chrome plated surfaces of the downlock link pin [2] with grease, D00633.

(b) Remove all unwanted grease, D00633.

(c) Put the downlock strut [1] in its position for connection to the upper side strut [3].

(d) Put the downlock link pin [2] through the upper side strut [3] and the downlock strut [1].

NOTE: Use the thread protector, C32029-13, SPL-1369, for the downlock link pin [2] when you do this step.

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces.

1) The threads and thread reliefs of the downlock link pin [2].
2) The threads of the nut [5].
3) The faces of the washer [4].

(f) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(g) Install the washer [4] and the nut [5] on the downlock link pin [2].

(h) Tighten the nut [5] to 360 in-lb (40.67 N·m) – 600 in-lb (67.79 N·m).

(i) If it is necessary, loosen the nut [5] to the nearest castellation to align the hole for the new pin [6].

(j) Install the new pin [6] in the downlock link pin [2].

SUBTASK 32-11-61-420-004

(8) Do this task: Main Gear Downlock Spring Installation, TASK 32-32-91-400-801.

SUBTASK 32-11-61-640-001

(9) Lubricate the lube fittings on the upper side strut, do this task: Main Landing Gear Upper End Components Servicing, TASK 12-21-11-640-801.

SUBTASK 32-11-61-780-001

(10) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-11-61-710-001

(11) Do this task: Main Landing Gear Operational Test, TASK 32-32-00-710-801.

NOTE: It is optional to perform the Main Landing Gear Test - Component Replacement, TASK 32-32-00-710-802 instead of the operational test if a hydraulic cart is not available.

SUBTASK 32-11-61-580-005

(12) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

TASK 32-11-61-000-802

4. Main Landing Gear Lower Side Strut Removal

(Figure 402)

A. General

(1) This task supplies instructions to remove the lower side strut.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-91-000-801	Main Gear Downlock Springs Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1370	Thread Protector, C32029-14 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Removal

SUBTASK 32-11-61-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-61-580-006

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-11-61-860-002

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-61-020-006

(4) Do this task: Main Gear Downlock Springs Removal, TASK 32-32-91-000-801.

F. Main Landing Gear Lower Side Strut Removal

SUBTASK 32-11-61-020-007

(1) Disconnect the lower side strut [8] from the pushrod [41].

(a) Remove the cotter pin [55], nut [42], and washer [43] from the bolt [46].

1) Discard the cotter pin [55].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the bolt [46], washer [44], and bushing [45] to disconnect the lower side strut [8] from the pushrod [41].

(c) Isolate the pushrod [41] from the lower side strut [8].

SUBTASK 32-11-61-480-004

(2) Use a rope to hold the pushrod [41] and the inner door in its position.

SUBTASK 32-11-61-020-008

(3) Disconnect the lower side strut [8] from the shock strut [51].

(a) Remove the pin [49], nut [50], and washer [48] from the cross bolt [47].

(b) Remove the cross bolt [47] from the side strut pin [52].

(c) Remove the side strut nut [54] and the side strut washer [53] from the side strut pin [52].

(d) Remove the side strut pin [52] to disconnect the lower side strut [8] from the shock strut [51].

NOTE: Use the thread protector, C32029-14, SPL-1370, for the side strut pin [52] when you do this step.

SUBTASK 32-11-61-020-009

(4) Disconnect the lower side strut [8] from the upper side strut [3].

(a) Remove the cotter pin [13], nut [14], and washer [12] from the bolt [11].

(b) Remove the bolt [11] from the side strut pin [7].

(c) Remove the end cap [9] from the side strut pin [7].

(d) Use a rope to support the upper end of the lower side strut [8] and attach the rope to the outboard side of the reaction link assembly [15].

NOTE: The lower side strut weighs approximately 48.3 lb (21.91 kg).

(e) Remove the side strut pin [7] to disconnect the upper side strut [3] from the lower side strut [8].

SUBTASK 32-11-61-020-016

(5) Carefully lower and remove the lower side strut [8] from the airplane.

NOTE: The lower side strut [8] weighs approximately 48.3 lb (21.91 kg).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

G18141 S0006574813_V3

Main Landing Gear Lower Side Strut Installation
Figure 402/32-11-61-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 BE SURE THAT THE BOLT HEAD POINTS INBOARD

G18246 S0006574814_V4

Main Landing Gear Lower Side Strut Installation
Figure 402/32-11-61-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-61-400-802

5. **Main Landing Gear Lower Side Strut Installation**
(Figure 402)

A. **General**

(1) This task supplies instructions to install the lower side strut.

B. **References**

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-21-11-640-801	Main Landing Gear Upper End Components Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)
32-32-91-400-801	Main Gear Downlock Spring Installation (P/B 401)

C. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1361	Wrench Adapter, C32029-39 or C32029-95 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1370	Thread Protector, C32029-14 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

D. **Consumable Materials**

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
8	Lower side strut	32-11-61-01-510	LOM ALL
13	Cotter pin	32-11-61-01-464	LOM ALL
49	Pin	32-11-61-03-040	LOM ALL
55	Cotter pin	32-13-21-01-203	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
55 (cont.)		32-13-21-01-204	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-215	LOM 437-447, 450-999
		32-13-21-04-220	LOM 437-447, 450-999

F. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

G. Prepare for the Installation

SUBTASK 32-11-61-480-005

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

H. Main Landing Gear Lower Side Strut Installation

SUBTASK 32-11-61-620-003

WARNING USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(1) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:
   - (a) Do not apply corrosion preventive compound to the chrome plated surfaces.
   - (b) The inside diameter of the side strut pin [7] and the inside unplated surface of the end caps [9].
   - (c) The threads of the nut [14].
   - (d) The face of the washer [12].

SUBTASK 32-11-61-160-003

(2) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the drainage holes in the end cap [9] are clear of the corrosion preventive Cor-Ban 27L Compound, G50237, after the application.

SUBTASK 32-11-61-620-004

(3) Lubricate the chrome plated surfaces of the side strut pin [7] and the surfaces of the end cap [9] with grease, D00633.

SUBTASK 32-11-61-160-004

(4) Remove all unwanted grease, D00633.

SUBTASK 32-11-61-420-014

(5) Connect the upper side strut [3] to the lower side strut [8].

(a) Remove the rope that supports the lower side strut [8] to the reaction link assembly [15].

(b) Put the upper side strut [3] in its position for connection to the lower side strut [8].

(c) Put the side strut pin [7] through the upper side strut [3] and the lower side strut [8].

(d) Install the end cap [9] on the side strut pin [7].

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to the threads, thread reliefs of the bolt [11] and its shank.

1) Do not apply corrosion preventive compound to the chrome plated surfaces

CAUTION

MAKE SURE THAT THE HEAD OF THE BOLT POINTS IN THE AFT DIRECTION. IF THE HEAD OF THE BOLT POINTS FORWARD, DAMAGE TO COMPONENTS AND THE AIRPLANE STRUCTURE WILL OCCUR.

(f) Install the bolt [11] in the side strut pin [7].

(g) Install the washer [12], and the nut [14] on the bolt [11].

(h) Tighten the nut [14] to 30 in-lb (3.39 N·m) - 50 in-lb (5.65 N·m) more than the run on torque.

(i) If it is necessary, loosen the nut [14] to the nearest castellation to align the hole for the new cotter pin [13].

(j) Install the new cotter pin [13] in the bolt [11].

SUBTASK 32-11-61-420-006

(6) Connect the lower side strut [8] to the shock strut [51].

(a) Lubricate the chrome plated surfaces of the side strut pin [52] with grease, D00633.

(b) Remove all unwanted grease, D00633.

(c) Put the lower side strut [8] in its position for attachment to the shock strut [51].

(d) Put the side strut pin [52] through the lower side strut [8] and the clevis on the shock strut [51].

1) Use the thread protector, C32029-14, SPL-1370, for the side strut pin [52] when you do this task.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION

DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136, to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.
2) The threads and thread reliefs of the side strut pin [52] and the cross bolt [47].
3) The threads of the side strut nut [54] and nut [50].
4) The faces of the side strut washer [53] and washer [48].

(f) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(g) Install the side strut washer [53] and the side strut nut [54] on the side strut pin [52].

(h) Tighten the side strut nut [54] to 95 ft-lb (128.80 N·m) -115 ft-lb (155.92 N·m) more than the run-on torque.

1) Use the wrench adapter, C32029-39 or C32029-95, SPL-1361, to hold the head of the side strut pin [52] when you tighten the side strut nut [54].

(i) If it is necessary, loosen the side strut nut [54] to the nearest castellation to align the hole for the cross bolt [47].

CAUTION

MAKE SURE THAT YOU INSTALL THE CROSS BOLT WITH THE BOLT HEAD INBOARD. A CHAFF DAMAGE CAN OCCUR TO THE SHEATHING ON THE CABLE OF THE GROUND SPOILER INTERLOCK IF THE COTTER PIN END OF THE BOLT IS INBOARD.

(j) Install the cross bolt [47] with the bolt head inboard in the side strut pin [52].

1) Make sure that the bolt head points inboard.

NOTE: Pin can interfere with ground spoiler interlock valve cable and cause premature failure of the cable.

(k) Install the washer [48] and the nut [50] on the cross bolt [47].

(l) Tighten the nut [50] to 20 in-lb (2.26 N·m) - 24 in-lb (2.71 N·m) more than the run-on torque.

(m) If it is necessary, loosen the nut [50] to the nearest castellation to align the hole for the new pin [49].

(n) Install the new pin [49] in the cross bolt [47].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(o) Check the interior of side strut pin [52] and repair the application of corrosion preventive Cor-Ban 27L Compound, G50237, as required.

SUBTASK 32-11-61-080-002

(7) Remove the rope that holds the pushrod [41] in its position.

SUBTASK 32-11-61-420-007

(8) Connect the lower side strut [8] to the pushrod [41].

(a) Lubricate the shank of the bolt [46] and bushing [45] with grease, D00633.

(b) Remove all unwanted grease, D00633.

(c) Align the hole in the pushrod [41] with the hole in the lower side strut [8].

(d) Put the bushing [45] through the lower side strut [8] and the pushrod [41].

(e) Install the washer [44] on the bolt [46].

(f) Put the bolt [46] through the lower side strut [8] and the pushrod [41].

(g) Install the washer [43] and nut [42] on the bolt [46].

(h) Hand tighten the nut [42] until after final adjustments to the doors are made in the subsequent steps.

SUBTASK 32-11-61-820-001

(9) If the length of pushrod [41] is changed, do the step that follows:

NOTE: No adjustment to the doors is necessary if the pushrod was not changed.

(a) Do this task: Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801.

SUBTASK 32-11-61-420-015

(10) Tighten the nut [42].

(a) Install the new cotter pin [55] in the hole of the bolt [46].

(b) If it is necessary, loosen the nut [42] to the nearest castellation to align the holes for the cotter pin [55].

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-61-420-013

(1) Do this task: Main Gear Downlock Spring Installation, TASK 32-32-91-400-801.

SUBTASK 32-11-61-640-002

(2) Lubricate the lube fittings on the lower side strut, do this task: Main Landing Gear Upper End Components Servicing, TASK 12-21-11-640-801.

SUBTASK 32-11-61-780-003

(3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-61-710-006

(4) Do this task: Main Landing Gear Operational Test, TASK 32-32-00-710-801.

NOTE: It is optional to perform the Main Landing Gear Test - Component Replacement, TASK 32-32-00-710-802 instead of the operational test if a hydraulic cart is not available.

SUBTASK 32-11-61-580-007

(5) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

——— END OF TASK ———

TASK 32-11-61-000-803

6. Main Landing Gear Side Strut Removal

(Figure 403)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task supplies instructions to remove the side strut.

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-91-000-801	Main Gear Downlock Springs Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1359	Wrench Adapter, C32029-3 or C32029-93 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1368	Thread Protector, C32029-12 or C32029-101 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1369	Thread Protector , C32029-13 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1370	Thread Protector, C32029-14 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Removal

SUBTASK 32-11-61-480-006

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-61-580-008

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-11-61-860-003

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-61-020-010

(4) Do this task: Main Gear Downlock Springs Removal, TASK 32-32-91-000-801.

F. Main Landing Gear Side Strut Removal

SUBTASK 32-11-61-020-011

(1) Disconnect the upper side strut [3] from the downlock strut [1].

(a) Remove the pin [6] from the downlock link pin [2].

(b) Remove the nut [5] and the washer [4] from the downlock link pin [2].

(c) Remove the downlock link pin [2] to disconnect the upper side strut [3] from the downlock strut [1].

NOTE: Use the thread protector, C32029-13, SPL-1369, for the downlock link pin [2] when you do this step.

SUBTASK 32-11-61-020-012

(2) Disconnect the lower side strut [8] from the pushrod [41].

(a) Remove the cotter pin [55], nut [42], and washer [43] from the bolt [46].

1) Discard the cotter pin [55].

(b) Remove the bolt [46], washer [44], and bushing [45] to disconnect the lower side strut [8] from the pushrod [41].

(c) Isolate the pushrod [41] from the lower side strut [8].

SUBTASK 32-11-61-480-007

(3) Use a rope to hold the pushrod [41] and the inner door in its position.

SUBTASK 32-11-61-020-013

(4) Disconnect the lower side strut [8] from the shock strut [51].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Remove the pin [49], nut [50], and washer [48] from the cross bolt [47].

(b) Remove the cross bolt [47] from the side strut pin [52].

(c) Remove the side strut nut [54] and the side strut washer [53] from the side strut pin [52].

(d) Remove the side strut pin [52] to disconnect the lower side strut [8] from the shock strut [51].

NOTE: Use the thread protector, C32029-14, SPL-1370, for the side strut pin when you do this step.

SUBTASK 32-11-61-020-014

(5) Disconnect the upper side strut [3] from the reaction link assembly [15].

(a) Remove the pin [19], nut [18], and washer [17] from the cross bolt [16].

(b) Remove the cross bolt [16] from the side strut pin [22].

(c) Remove the side strut nut [20] and the side strut washer [21] from the side strut pin [22].

NOTE: Use wrench adapter, C32029-3 or C32029-93, SPL-1359, to hold the head of the side strut pin [22] when you loosen the side strut nut [20].

(d) Remove the side strut pin [22] that holds the upper side strut [3] to the reaction link assembly [15].

NOTE: Use the thread protector, C32029-12 or C32029-101, SPL-1368, for the side strut pin when you do this step.

SUBTASK 32-11-61-020-015

(6) Remove the assembly of the upper side strut [3] and the lower side strut [8] from the airplane.

NOTE: The side strut assembly weighs approximately 90.11 lb (40.87 kg).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

G18251 S0006574817_V2

Main Landing Gear Side Strut Installation
Figure 403/32-11-61-990-803 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Side Strut Installation
Figure 403/32-11-61-990-803 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Side Strut Installation
Figure 403/32-11-61-990-803 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-61-400-803

7. Main Landing Gear Side Strut Installation

(Figure 403)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task supplies instructions to install the side strut.

B. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-21-11-640-801	Main Landing Gear Upper End Components Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)
32-32-91-400-801	Main Gear Downlock Spring Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1359	Wrench Adapter, C32029-3 or C32029-93 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1361	Wrench Adapter, C32029-39 or C32029-95 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1368	Thread Protector, C32029-12 or C32029-101 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1369	Thread Protector , C32029-13 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1370	Thread Protector, C32029-14 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

D. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

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(Continued)

Reference	Description	Specification
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Upper side strut	32-11-61-01-480	LOM ALL
6	Pin	32-11-61-01-175	LOM ALL
19	Pin	32-11-71-01-055	LOM ALL
49	Pin	32-11-61-03-040	LOM ALL
55	Cotter pin	32-13-21-01-203	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-204	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-215	LOM 437-447, 450-999
		32-13-21-04-220	LOM 437-447, 450-999

F. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

G. Prepare for the Installation

SUBTASK 32-11-61-480-008

WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

H. Main Landing Gear Side Strut Installation

SUBTASK 32-11-61-420-008

(1) Connect the upper side strut [3] to the reaction link assembly [15].

(a) Lubricate the chrome plated surfaces of the side strut pin [22] with the grease, D00633.

(b) Remove all unwanted grease, D00633.

(c) Put the upper side strut [3] in its position for connection to the reaction link assembly [15].

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CAUTION	MAKE SURE THAT THE HEAD OF THE PIN POINTS IS IN THE FORWARD DIRECTION. IF THE HEAD OF THE PIN POINTS IS IN AFT DIRECTION, DAMAGE TO COMPONENTS AND THE AIRPLANE STRUCTURE WILL OCCUR.

(d) Put the side strut pin [22] through the upper side strut [3] and reaction link assembly [15].

1) Make sure that the head of the side strut pin [22] points in the forward direction.

a) Use a thread protector, C32029-12 or C32029-101, SPL-1368, for the side strut pin.

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136, to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.

2) The threads and thread reliefs of the side strut pin [22] and cross bolt [16].

3) The threads of the side strut nut [20] and nut [18].

4) The faces of the side strut washer [21] and washer [17].

(f) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(g) Install the side strut washer [21] and side strut nut [20] on the side strut pin [22].

(h) Tighten the side strut nut [20] to 600 in-lb (67.79 N·m) - 900 in-lb (101.69 N·m).

1) Use a wrench adapter, C32029-3 or C32029-93, SPL-1359, to hold the head of the side strut pin when you tighten the side strut nut.

(i) If it is necessary, loosen the side strut nut [20] to the nearest castellation to align the hole for the cross bolt [16].

(j) Install the cross bolt [16] in the side strut pin [22].

(k) Install the washer [17] and nut [18] on the cross bolt [16].

(l) Tighten the nut [18] to 30 in-lb (3.39 N·m) - 50 in-lb (5.65 N·m).

(m) If it is necessary, loosen the nut [18] to the nearest castellation to align the holes for the new pin [19].

(n) Install the new pin [19] in the cross bolt [16].

SUBTASK 32-11-61-420-009

(2) Connect the lower side strut [8] to the shock strut [51].

(a) Lubricate the chrome plated surfaces of the side strut pin [52] with grease, D00633.

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(b) Remove all unwanted grease, D00633.

(c) Put the lower side strut [8] in its position for attachment to the shock strut [51].

(d) Put the side strut pin [52] through the lower side strut [8] and clevis on the shock strut [51].

1) Use a thread protector, C32029-14, SPL-1370, for the side strut pin.

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136, to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.

2) The threads and thread reliefs of the side strut pin [52] and cross bolt [47].

3) The threads of the side strut nut [54] and nut [50].

4) The faces of the side strut washer [53] and washer [48].

(f) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(g) Install the side strut washer [53] and side strut nut [54] on the side strut pin [52].

(h) Tighten the side strut nut [54] to 95 ft-lb (128.80 N·m) – 115 ft-lb (155.92 N·m) more than the run on torque.

1) Use a wrench adapter, C32029-39 or C32029-95, SPL-1361, to hold the head of the side strut pin when you tighten the side strut nut.

CAUTION	MAKE SURE THAT YOU INSTALL THE CROSS BOLT WITH THE BOLT HEAD INBOARD. A CHAFF DAMAGE CAN OCCUR TO THE SHEATHING ON THE CABLE OF THE GROUND SPOILER INTERLOCK IF THE COTTER PIN END OF THE BOLT IS INBOARD.

(i) Install the cross bolt [47] with the bolt head inboard in the side strut pin [52].

1) Make sure that the bolt head points inboard.

NOTE: Pin can interfere with ground spoiler interlock valve cable and cause premature failure of the cable.

(j) If it is necessary, loosen the side strut nut [54] to the nearest castellation to align the hole for the cross bolt [47].

(k) Install the washer [48] and nut [50] on the cross bolt [47].

(l) Tighten the nut [50] to 20 in-lb (2.26 N·m) - 24 in-lb (2.71 N·m) more than the run on torque.

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(m) If it is necessary, loosen the nut [50] to the nearest castellation to align the hole for the new pin [49].

(n) Install the new pin [49] in the cross bolt [47].

(o) Check the interior of side strut pin [52] and reapply corrosion preventive Cor-Ban 27L Compound, G50237, as required.

SUBTASK 32-11-61-080-003

(3) Remove the rope that holds the pushrod [41] in its position.

SUBTASK 32-11-61-420-010

(4) Connect the lower side strut [8] to the pushrod [41].

(a) Lubricate the shank of the bolt [46] and bushing [45] with grease, D00633.

(b) Remove all unwanted grease, D00633.

(c) Align the hole in the pushrod [41] with the hole in the lower side strut [8].

(d) Put the bushing [45] through the lower side strut [8] and pushrod [41].

(e) Install the washer [44] on the bolt [46].

(f) Put the bolt [46] through the lower side strut [8] and pushrod [41].

(g) Install the washer [43] and nut [42] on the bolt [46].

1) Do not tighten the nut.

NOTE: Final torque to the nut will be done after final adjustments to the doors are made in the subsequent step.

SUBTASK 32-11-61-420-011

(5) Connect the upper side strut [3] to the downlock strut [1].

(a) Lubricate the chrome plated surfaces of the downlock link pin [2] with grease, D00633.

(b) Remove all unwanted grease, D00633.

(c) Put the downlock strut [1] in its position for connection to the upper side strut [3].

(d) Put the downlock link pin [2] through the upper side strut [3] and the downlock strut [1].

1) Use a thread protector, C32029-13, SPL-1369, for the downlock link pin.

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

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(WARNING PRECEDES)

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces.

NOTE: If Cor-Ban 27L Compound, G50237, is not available, you can use corrosion inhibiting material, G50136, as an approved alternate.

1) The threads and thread reliefs of the downlock link pin [2]
2) The threads of the nut [5]
3) The faces of the washer [4].

(f) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(g) Install the washer [4] and nut [5] on the downlock link pin [2].

(h) Tighten the nut [5] to 360 in-lb (40.67 N·m) - 600 in-lb (67.79 N·m).

(i) If it is necessary, loosen the nut [5] to the nearest castellation to align the hole for the new pin [6].

(j) Install the new pin [6] in the downlock link pin [2].

SUBTASK 32-11-61-820-002

(6) If the length of pushrod [41] is changed, do the step that follows:

NOTE: No adjustment to the doors is necessary if the pushrod was not changed.

(a) Do this task: Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801.

SUBTASK 32-11-61-420-016

(7) Tighten the nut [42].

(a) Install the new cotter pin [55] in the hole of the bolt [46].

(b) If it is necessary, loosen the nut [42] to the nearest castellation to align the holes for the cotter pin [55].

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-61-420-012

(1) Do this task: Main Gear Downlock Spring Installation, TASK 32-32-91-400-801.

SUBTASK 32-11-61-640-003

(2) Lubricate the lube fittings on the side strut, do this task: Main Landing Gear Upper End Components Servicing, TASK 12-21-11-640-801.

SUBTASK 32-11-61-780-004

(3) For hydraulic systems A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

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SUBTASK 32-11-61-710-002

(4) Do this task: Main Landing Gear Operational Test, TASK 32-32-00-710-801.

NOTE: It is optional to perform the Main Landing Gear - Component Replacement, TASK 32-32-00-710-802 instead of the operational test if a hydraulic cart is not available.

SUBTASK 32-11-61-580-009

(5) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

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MAIN LANDING GEAR SIDE STRUT ASSEMBLY - INSPECTION/CHECK

1. General

A. This task supplies the data for a dimensional inspection of the side strut assembly for the main landing gear.

B. This task does not remove or install the side strut assembly. Refer to the Main Landing Gear Side Strut Assembly - Removal/Installation for procedures to remove and install the side strut assembly for the main landing gear.

TASK 32-11-61-200-803

2. Main Landing Gear Side Strut Assembly Inspection

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

C. General

SUBTASK 32-11-61-200-002

(1) This task gives the maximum design and wear clearances for the side strut assembly for the main landing gear.

NOTE: A certain amount of free play is allowable as a result of design tolerances for all joints on the side strut assembly.

D. Procedure

SUBTASK 32-11-61-480-010

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-61-200-001

(2) Examine the joints on the side strut assembly for the main landing gear.

(a) Make sure the all joints on the side strut assembly for the main landing gear are within the maximum design or wear clearances.

(b) If the joint exceeds the maximum wear clearance then replace or repair the applicable part.

Main Landing Gear Side Strut Design and Wear Clearances

Joint (Main Landing Gear Side Strut Design Clearance/Figure 601)	Maximum Design Clearances inches/mm	Maximum Wear Clearance
A *[1]	0.041 in. (1.041 mm)	0.060 in. (1.524 mm)
B1**[2]	0.105 in. (2.667 mm)	0.150 in. (3.810 mm)

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Main Landing Gear Side Strut Design and Wear Clearances (Continued)

Joint (Main Landing Gear Side Strut Design Clearance/Figure 601)	Maximum Design Clearances inches/mm	Maximum Wear Clearance
B2 *[3]	0.201 in. (5.105 mm)	0.240 in. (6.096 mm)
C *[4]	0.105 in. (2.667 mm)	0.150 in. (3.810 mm)
D *[5]	0.050 in. (1.270 mm)	0.070 in. (1.778 mm)
E *[6]	0.041 in. (1.041 mm)	0.061 in. (1.549 mm)
F *[7]	0.021 in. (0.533 mm)	0.043 in. (1.092 mm)
G *[8]	0.068 in. (1.727 mm)	0.098 in. (2.489 mm)

*[1] Distance between the outboard end of the reaction link and outer cylinder.
*[2] Distance between flange face of hanger link to end of spacer.
*[3] Distance between the hanger link and the fuselage attach fitting.
*[4] Maximum axial free play for the side of body joint pin.
*[5] Distance between the inboard end of the reaction link and the lower end of the hanger link.
*[6] Distance between the upper end of the upper side strut and the reaction link.
*[7] Distance between the upper and lower side strut.
*[8] Distance between the lower end of the lower side strut and the outer cylinder.

END OF TASK

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LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

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Main Landing Gear Side Strut Design Clearance
Figure 601/32-11-61-990-805

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MAIN LANDING GEAR SIDE BRACE ASSEMBLY – REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Main Landing Gear Side Brace Removal

(2) Main Landing Gear Side Brace Installation.

TASK 32-11-62-000-801

2. Main Landing Gear Side Brace Assembly Removal

(Figure 401 and Figure 402)

A. General

(1) This task gives the instructions to remove the Main Landing Gear (MLG) side strut assembly along with the MLG reaction link assembly.

(2) The MLG side strut assembly along with the MLG reaction link assembly is referred to as the MLG side brace assembly.

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1364	Slug Driver Assy, C32029-8 (include in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1370	Thread Protector, C32029-14 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-8264	Transportation Equipment - Tower Jack or Holding Fixture, MLG Part #: J32062-26 Supplier: 81205 Opt Part #: J32062-1 Supplier: 81205
SPL-11946	Wrench Adapter, C32029-31 or C32029-99 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-19644	Dolly - Side Strut, MLG Part #: C32078-1 Supplier: 81205

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D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Removal

SUBTASK 32-11-62-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-62-580-001

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-11-62-860-001

(3) Remove the power from the hydraulic systems A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-62-860-002

(4) Remove the pressure from the hydraulic reservoirs, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

F. Main Landing Gear Side Brace Assembly Removal

SUBTASK 32-11-62-020-001

(1) Do these steps to disconnect the lower side strut [2] from the pushrod [3].

(a) Remove the nut [4] and washer [5] from the bolt [8].

(b) Remove the bolt [8], washer [6], and bushing [7] to disconnect the lower side strut [2] from the pushrod [3].

(c) Isolate the pushrod [3] from the lower side strut [2].

(d) Use a rope to hold the pushrod [3] and the inner door in its position.

SUBTASK 32-11-62-020-002

(2) Do these steps to disconnect the lower side strut [2] from the shock strut [13].

(a) Remove the cotter pin [11], nut [12], and washer [10] from the cross bolt [9].

(b) Remove the cross bolt [9] from the side strut pin [14].

(c) Remove the side trut nut [16] and side strut washer [15] from the side strut pin [14].

(d) Remove the side strut pin [14] to disconnect the lower side strut [2] from the shock strut [13].

NOTE: Use the thread protector, C32029-14, SPL-1370, for the side strut pin [14] when you do this step.

(e) Use the strap assembly to temporarily hold lower side strut [2] in its position.

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SUBTASK 32-11-62-480-003

(3) Do these steps to install the strut support assembly to the side brace assembly [1].

NOTE: The strut support assembly is part of the side strut dolly, SPL-19644. For installation instructions, refer to the tool placard.

(a) Install the protective pad on the lower side strut [2].

(b) Use the transportation equipment, SPL-8264 to lift the strut support assembly into position under the side brace assembly [1].

1) Install the ball lock pins to lock the strut support assembly.

NOTE: The two side ball lock pins lock the strut support assembly to the transportation equipment, SPL-8264. The top ball lock pin locks the rotation of the strut support assembly. You can remove the top ball lock pin to rotate the strut support assembly.

2) If the strut support assembly is installed on the cart assembly, remove the thumb screws before you lift the strut support assembly away from the cart assembly.

NOTE: Do not lift the cart assembly with the strut support assembly.

(c) Secure the side brace assembly [1] to the strut support assembly.

1) Install the strap assembly that holds the side brace assembly [1] to the strut support assembly.

2) Tighten the swivel screws that secure the side brace assembly [1] to the strut support assembly.

SUBTASK 32-11-62-020-003

(4) Do these steps to disconnect the reaction link assembly [17] from the trunnion [18]:

(a) Remove the cotter pin [23], nut [22], and washer [21] from the cross bolt [19].

(b) Remove the cross bolt [19] from the trunnion pin [20].

(c) Remove the end cap [24] from the trunnion pin [20].

(d) Remove the trunnion pin [20] that attaches the reaction link assembly [17] to the trunnion [18].

1) Use the slug driver assy, C32029-8, SPL-1364, when you do this task.

SUBTASK 32-11-62-020-004

(5) Disconnect the electrical harnesses [26].

SUBTASK 32-11-62-020-005

(6) Do these steps to disconnect the hydraulic line [28] and hydraulic line [28A] from the hydraulic tubes [27]:

(a) Disconnect the hydraulic line [28] and hydraulic line [28A] from the hydraulic tubes [27].

(b) Install caps on the hydraulic line [28] and hydraulic line [28A].

(c) Put tags on the hydraulic line [28] and hydraulic line [28A] to prevent the crossing of the lines during the installation.

(d) Install caps on the hydraulic tubes [27].

SUBTASK 32-11-62-020-006

(7) Do these steps to remove the hanger link assembly [29] from the supporting structure:

(a) Remove the cotter pin [30], nut [31], and washer [32] from the cross bolt [33].

(b) Remove the cross bolt [33] from the hanger link assembly pin [36].

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(c) Remove the nut [34] and washer [35] from the hanger link assembly pin [36] with wrench adapter, C32029-31 or C32029-99, SPL-11946.

(d) Remove the hanger link assembly pin [36] and bushing [37] that attaches the hanger link assembly [29] to the supporting structure.

(e) Use the strap assembly to hold lower side strut [2] to the hanger link assembly [29].

SUBTASK 32-11-62-020-007

(8) Use the transportation equipment, SPL-8264 to lower the strut support assembly along with the side brace assembly [1] into position on the cart assembly.

(a) If it is necessary, disconnect the lower end of the support rod [50] and support rod [51] from the wheel well structure.

1) Remove the bolt [52], washer [53], bushing [54], washer [55], and nut [56].

(b) Install the top ball lock pin to lock the rotation of the strut support assembly.

(c) Install the thumb screws to secure the strut support assembly to the cart assembly.

(d) Remove the two side ball lock pins.

NOTE: The two side ball lock pins lock the strut support assembly to the transportation equipment, SPL-8264.

(e) Remove the transportation equipment, SPL-8264.

END OF TASK

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LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

2967878 S0000747284_V1

Main Landing Gear Side Brace Assembly Installation
Figure 401/32-11-62-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2967879 S0000747285_V1

Main Landing Gear Side Brace Assembly Installation
Figure 401/32-11-62-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Side Brace Assembly Installation
Figure 401/32-11-62-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F

2968257 S0000747287_V2

Main Landing Gear Side Brace Assembly Installation
Figure 401/32-11-62-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2967881 S0000747288_V1

Main Landing Gear Side Brace Assembly Installation
Figure 401/32-11-62-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Side Brace Rigging Equipment
Figure 402/32-11-62-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE)

1 DO NOT LIFT THE CART ASSEMBLY WITH THE STRUT SUPPORT ASSEMBLY.

2968093 S0000747291_V1

Main Landing Gear Side Brace Rigging Equipment
Figure 402/32-11-62-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-62-400-801

3. Main Landing Gear Side Brace Assembly Installation

(Figure 401 and Figure 402)

A. General

(1) This task gives the instructions to install the Main Landing Gear (MLG) side strut assembly along with the MLG reaction link assembly.

(2) The MLG side strut assembly along with the MLG reaction link assembly is referred to as the MLG side brace assembly.

B. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-21-11-640-801	Main Landing Gear Upper End Components Servicing (P/B 301)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1361	Wrench Adapter, C32029-39 or C32029-95 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1370	Thread Protector, C32029-14 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-8264	Transportation Equipment - Tower Jack or Holding Fixture, MLG Part #: J32062-26 Supplier: 81205 Opt Part #: J32062-1 Supplier: 81205
SPL-11946	Wrench Adapter, C32029-31 or C32029-99 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-19644	Dolly - Side Strut, MLG Part #: C32078-1 Supplier: 81205

D. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description	Specification
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Prepare for the Installation

SUBTASK 32-11-62-480-004

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

G. Main Landing Gear Side Brace Assembly Installation

SUBTASK 32-11-62-480-005

> **CAUTION** BE CAREFUL WHEN YOU MOVE THE SIDE BRACE ASSEMBLY INTO ITS POSITION. IF YOU DO NOT OBEY, DAMAGE TO THE COMPONENTS CAN OCCUR.

(1) Use the transportation equipment, SPL-8264 to lift the strut support assembly along with the side brace assembly [1] into position on the MLG.

NOTE: The strut support assembly is part of the side strut dolly, SPL-19644. For installation instructions, refer to the tool placard.

(a) If not already done, install the protective pad on the lower side strut [2].

(b) If not already done, secure the side brace assembly [1] to the strut support assembly.

1) Install the strap assembly to hold the side brace assembly [1] to the strut support assembly.

2) Tighten the swivel screws to secure the side brace assembly [1] to the strut support assembly.

(c) Install the ball lock pins to lock the strut support assembly.

NOTE: The two side ball lock pins lock the strut support assembly to the transportation equipment, SPL-8264. The top ball lock pin locks the rotation of the strut support assembly. You can remove the top ball lock pin to rotate the strut support assembly.

(d) If the strut support assembly is installed on the cart assembly, remove the thumb screws before you lift the strut support assembly away from the cart assembly.

NOTE: Do not lift the cart assembly with the strut support assembly.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-62-420-001

(2) Do these steps to connect the reaction link assembly [17] to the trunnion [18]:

(a) Lubricate the chrome plated surfaces of the trunnion pin [20] and the end cap [24] with grease, D00633.

(b) Position the outboard end of the reaction link assembly [17] for attachment to the trunnion [18].

(c) Put the trunnion pin [20] through the reaction link assembly [17] and the trunnion [18].

(d) Install the end cap [24] on the trunnion pin [20].

(e) Put the cross bolt [19] through the trunnion pin [20] and the end cap [24].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(f) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.

2) The threads and thread reliefs of the cross bolt [19].

3) The threads of the nut [22].

4) The faces of the washer [21].

(g) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(h) Install the washer [21] and nut [22] on the cross bolt [19].

(i) If it is necessary, loosen the nut [22] to the nearest castellation that aligns with the hole for the cotter pin [23].

(j) Install the cotter pin [23] in the cross bolt [19].

SUBTASK 32-11-62-420-002

(3) Do these steps to install the hanger link assembly [29] into the supporting structure:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

CAUTION	MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.
2) The threads and thread reliefs of the hanger link assembly pin [36] and cross bolt [33].
3) The threads of the nut [34] and nut [31].
4) The faces of the washer [35] and washer [32].
5) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(b) Prior to installation of the hanger link assembly pin [36], lubricate chrome plated surfaces with grease, D00633.

(c) Install the hanger link assembly pin [36] that supports the hanger link assembly [29] to the supporting structure, through the hanger link assembly [29].

(d) Install the washer [35] and nut [34] on the hanger link assembly pin [36].

NOTE: Do not tighten the nut [34] at this time.

SUBTASK 32-11-62-420-003

(4) Do these steps to connect the hydraulic line [28] and hydraulic line [28A] to the hydraulic tubes [27]:

(a) Remove the caps from the hydraulic line [28], hydraulic line [28A] and hydraulic tubes [27].

(b) Connect the hydraulic line [28] and hydraulic line [28A] to the hydraulic tubes [27].

(c) Torque the hydraulic line [28] to 140 ±7 in-lb (16 ±1 N·m).

(d) Torque the hydraulic line [28A] to 270 ±14 in-lb (31 ±2 N·m).

(e) Remove the tags from the hydraulic line [28] and hydraulic line [28A].

SUBTASK 32-11-62-420-004

(5) Do these steps to connect the lower side strut [2] to the shock strut [13]:

(a) Lubricate the chrome plated surfaces of the side strut pin [14] with grease, D00633.

(b) Remove all unwanted grease, D00633.

(c) Put the lower side strut [2] in its position for attachment to the shock strut [13].

(d) Put the side strut pin [14] through the lower side strut [2] and the clevis on the shock strut [13].

NOTE: Use the thread protector, C32029-14, SPL-1370, for the side strut pin [14] when you do this task.

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WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces.

NOTE: If Cor-Ban 27L Compound, G50237, is not available, you can use corrosion inhibiting material, G50136, as an approved alternate.

1) The threads and thread reliefs of the side strut pin [14], cotter pin [11], and the cross bolt [9].
2) The threads of the side strut pin [14] and nut [12].
3) The faces of the side strut washer [15] and washer [10].

(f) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(g) Install the side strut washer [15] and side trut nut [16] on the side strut pin [14].

NOTE: Do not tighten the side trut nut [16] at this time.

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(h) Check the interior of side strut pin [14] and repair the application of corrosion preventive Cor-Ban 27L Compound, G50237, as required.

SUBTASK 32-11-62-420-005

(6) Do these steps to tighten the fasteners at the hanger link assembly pin [36]:

(a) Use wrench adapter, C32029-31 or C32029-99, SPL-11946, to hold hanger link assembly pin [36] to tighten nut [34].

(b) Torque the nut [34] to 95 ft-lb (129 N·m) – 115 ft-lb (156 N·m) above run-on torque and loosen the nut to align the nearest castellation if it is necessary.

(c) Install the cross bolt [33] in the hanger link assembly pin [36].

(d) Install the nut [31] and washer [32] to the cross bolt [33].

(e) Torque the nut [31] to 20 in-lb (2.3 N·m) – 24 in-lb (2.7 N·m) above run-on torque.

(f) If it is necessary, loosen the nut [31] to the nearest castellation that aligns with the hole for the cotter pin [30].

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(g) Install the cotter pin [30] in the cross bolt [33].

SUBTASK 32-11-62-420-006

(7) Do these steps to tighten the fasteners at the side strut pin [14]:

(a) Torque the side trut nut [16] to 95 ft-lb (128.80 N·m) – 115 ft-lb (155.92 N·m) more than the run-on torque.

NOTE: Use the wrench adapter, C32029-39 or C32029-95, SPL-1361, to hold the head of the side strut pin [14] when you tighten the side trut nut [16].

(b) If it is necessary, loosen the side trut nut [16] to the nearest castellation to align the hole for the cross bolt [9].

(c) Install the cross bolt [9] with the bolt head inboard in the side strut pin [14].

1) Make sure that the bolt head points inboard.

NOTE: Pin can interfere with Ground Spoiler Interlock Valve Cable and cause premature failure of the cable.

(d) Install the washer [10] and nut [12] on the cross bolt [9].

(e) Torque the nut [12] to 20 in-lb (2.26 N·m) – 24 in-lb (2.71 N·m) more than the run-on torque.

(f) If it is necessary, loosen the nut [12] to the nearest castellation to align the hole for the cotter pin [11].

CAUTION	MAKE SURE THAT THE COTTER PIN IS INSTALLED CORRECT. A CHAFF CONDITION CAN OCCUR TO THE SHEATHING ON THE CABLE OF THE GROUND SPOILER INTERLOCK. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(g) Install the cotter pin [11] in the cross bolt [9].

1) Make sure that you install the cotter pin [11] in accordance with TASK 20-10-44-400-801.

SUBTASK 32-11-62-080-001

(8) Do these steps to remove the strut support assembly from the side brace assembly [1]:

(a) Remove the strap assembly that holds the side brace assembly [1] to the strut support assembly.

(b) Loosen the swivel screws that secure the side brace assembly [1] to the strut support assembly.

SUBTASK 32-11-62-080-002

(9) Use the transportation equipment, SPL-8264 to lower the strut support assembly into position on the cart assembly.

(a) Install the top ball lock pin to lock the rotation of the strut support assembly.

(b) Install the thumb screws to secure the strut support assembly to the cart assembly.

(c) Remove the two side ball lock pins.

NOTE: The two side ball lock pins lock the strut support assembly to the transportation equipment, SPL-8264.

(d) Remove the transportation equipment, SPL-8264.

SUBTASK 32-11-62-420-009

(10) If removed, connect the lower end of the support rod [50] and support rod [51] from the wheel well structure.

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(a) Install the bolt [52], washer [53], bushing [54], washer [55], and nut [56].

SUBTASK 32-11-62-420-008

(11) Do these steps to connect the lower side strut [2] to the pushrod [3]:

(a) Remove the rope that holds the pushrod [3] in its position.

(b) Lubricate the nut [4], washer [5], and bolt [8] with grease, D00633.

(c) Remove all unwanted grease, D00633.

(d) Align the hole in the pushrod [3] with the hole in the lower side strut [2].

(e) Put the bushing [7] through the lower side strut [2] and the pushrod [3].

(f) Install the washer [6] on the bolt [8].

(g) Put the bolt [8] through the lower side strut [2] and the pushrod [3].

(h) Install the washer [5] and nut [4] on the bolt [8].

(i) Hand tighten the nut [4] until after final adjustments to the doors are made in the subsequent steps.

SUBTASK 32-11-62-820-001

(12) If you changed the length of pushrod [3], do the step that follows:

NOTE: No adjustment to the doors is necessary if the pushrod was not changed.

(a) Do this task: Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-62-640-001

(1) Lubricate the lube fittings on the MLG side brace assembly, do this task: Main Landing Gear Upper End Components Servicing, TASK 12-21-11-640-801.

SUBTASK 32-11-62-860-004

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-11-62-710-001

(3) Do this task: Main Landing Gear Operational Test, TASK 32-32-00-710-801.

NOTE: It is optional to perform the Main Landing Gear Test - Component Replacement, TASK 32-32-00-710-802 instead of the operational test if a hydraulic cart is not available.

SUBTASK 32-11-62-790-001

(4) Do a check of the hydraulic connections for leakage.

SUBTASK 32-11-62-580-002

(5) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR REACTION LINK ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the reaction link assembly for the main landing gear

(2) An installation of the reaction link assembly for the main landing gear.

TASK 32-11-71-000-801

2. Main Landing Gear Reaction Link Assembly Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-91-000-801	Main Gear Downlock Springs Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1359	Wrench Adapter, C32029-3 or C32029-93 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1360	Wrench Adapter, C32029-4 or C32029-94 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1364	Slug Driver Assy, C32029-8 (include in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1368	Thread Protector, C32029-12 or C32029-101 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1369	Thread Protector , C32029-13 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

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(Continued)

Reference	Description
SPL-11946	Wrench Adapter, C32029-31 or C32029-99 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-71-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-71-580-002

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-11-71-860-005

(3) Remove the power from the hydraulic systems A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-71-860-001

(4) Remove the pressure from the hydraulic reservoirs, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

E. Main Landing Gear Reaction Link Assembly Removal

SUBTASK 32-11-71-020-001

(1) Do this task: Main Gear Downlock Springs Removal, TASK 32-32-91-000-801.

SUBTASK 32-11-71-020-002

(2) Do these steps to disconnect the hydraulic line [37] and hydraulic line [37A] from the hydraulic tubes [2]:

(a) Disconnect the hydraulic line [37] and hydraulic line [37A] from the hydraulic tubes [2] attached to the bracket assembly [38].

(b) Install the caps/plugs, STD-14686, on the hydraulic line [37] and hydraulic line [37A].

(c) Put tags on the hydraulic line [37] and hydraulic line [37A] to prevent the crossing of the lines during the installation.

(d) Disconnect the hydraulic tubes [2] from the downlock actuator [4].

(e) Install the caps/plugs, STD-14686, on the hydraulic tubes [2].

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(f) Install the caps/plugs, STD-14686, on the unions in the ports of the downlock actuator [4].

SUBTASK 32-11-71-020-003

(3) Do these steps to disconnect the reaction link assembly [1] from the downlock actuator [4]:

(a) Remove the cotter pin [11], nut [10], and the washer [9] from the rod end pin [6].

(b) Remove the rod end pin [6] that attaches the head end of the downlock actuator [4] to the reaction link assembly [1].

(c) Remove the washers [7] and washers [8].

(d) Slowly lower the head end of the downlock actuator [4] to the upper end of the upper side strut [21].

(e) Use a tape to attach the head end of the downlock actuator [4] to the upper end of the upper side strut [21].

NOTE: This task will prevent the downlock actuator from moving when you do the subsequent steps.

SUBTASK 32-11-71-020-004

(4) Do these steps to disconnect the reaction link assembly [1] from the upper lock link [5]:

(a) Remove the cotter pin [16] from the downlock link pin [13].

(b) Remove the nut [15] and the washer [14] from the downlock link pin [13].

1) Use the wrench adapter wrench adapter, C32029-4 or C32029-94, SPL-1360, to hold the head of the downlock link pin [13] when you loosen the nut [15].

(c) Remove the downlock link pin [13] that attaches the reaction link assembly [1] to the upper lock link [5].

1) Use the thread protector, C32029-13, SPL-1369, when you do this step.

SUBTASK 32-11-71-020-005

(5) Do these steps to disconnect the reaction link assembly [1] from the upper side strut [21]:

(a) Remove the cotter pin [23], nut [22] and washer [24] from crossbolt [17].

(b) Remove the crossbolt [17] from the side strut pin [20].

(c) Remove the side side strut nut [18] and the side strut washer [19] from the side strut pin [20].

1) Use the wrench adapter wrench adapter, C32029-3 or C32029-93, SPL-1359, to hold the head of the side strut pin [20] when you loosen the side strut nut [18].

(d) Attach a strap to the upper end of the upper side strut [21].

1) If you will not remove the hanger link assembly [35], attach a strap to the upper end of the upper side strut [21] and loop the strap over the hanger link assembly [35]. Route the strap such that it will not interfere with removal of the reaction link assembly [1].

2) If you will remove the hanger link assembly [35], attach a strap to the upper end of the upper side strut [21] and loop the strap over the main landing gear beam support hanger, located aft of the hanger link assembly [35]. Route the strap such that it will not interfere with removal of the reaction link assembly [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING YOU MUST HAVE TWO PERSONNEL TO LIFT THIS COMPONENT. THE COMPONENT IS HEAVY. IF YOU DO NOT OBEY, INJURY TO PERSONNEL CAN OCCUR.

(e) Remove the side strut pin [20] that attach the reaction link assembly [1] to the upper side strut [21].

NOTE: The reaction link assembly [1] weighs approximately 63.2 lb (28.7 kg).

1) Use the thread protector, C32029-12 or C32029-101, SPL-1368, when you do this step.

SUBTASK 32-11-71-020-006

(6) Do these steps to disconnect the reaction link assembly [1] from the hanger link assembly [35]:

(a) Remove the pin assembly [31] from the reaction link assembly [1].

(b) Remove the cotter pin [28], nut [29] and washer [30] from the crossbolt [25].

(c) Remove the crossbolt [25] from the end cap [27].

(d) Remove the washer [26] from the crossbolt [25].

(e) Isolate the end cap [27], bracket assembly [38], hydraulic tube [2], electrical harness [12], and the spacer [32] and spacer [36] as an assembly from the reaction link assembly [1].

(f) If it is necessary to disconnect the electrical harness [12], do this step:

1) Disconnect the electrical harness [12] by removing the bolts for the bracket which holds the sensor to the upper lock link [5].

(g) Remove the hanger link pin [34] that attaches the reaction link assembly [1] to the hanger link assembly [35].

1) Use the slug driver slug driver assy, C32029-8, SPL-1364, when you do this step.

SUBTASK 32-11-71-020-013

(7) If it is necessary, do the following steps to remove the hanger link assembly [35] from the supporting structure:

(a) Remove the cotter pin [53], nut [52] and washer [51] from the crossbolt [50].

(b) Remove the cross bolt [50] from the hanger link assembly pin [46].

(c) Remove the nut [49] and washer [48] from the hanger link assembly pin [46] with wrench adapter, C32029-31 or C32029-99, SPL-11946.

(d) Remove the hanger link assembly pin [46] that attaches the hanger link assembly to the supporting structure.

(e) Remove the hanger link assembly [35].

SUBTASK 32-11-71-020-007

(8) Do these steps to disconnect the reaction link assembly [1] from the trunnion [41]:

(a) Remove the cotter pin [44], nut [43] and washer [42] from the crossbolt [39].

(b) Remove the crossbolt [39] from the trunnion pin [40].

(c) Remove the end cap [45] from the trunnion pin [40].

(d) Remove the trunnion pin [40] that attaches the reaction link assembly [1] to the trunnion [41].

1) Use the slug driver slug driver assy, C32029-8, SPL-1364, when you do this task.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-71-020-008

WARNING YOU MUST HAVE TWO PERSONNEL TO LIFT THIS COMPONENT. THE COMPONENT IS HEAVY. IF YOU DO NOT OBEY, INJURY TO PERSONNEL CAN OCCUR.

(9) Remove the reaction link assembly [1] from the airplane.

NOTE: The reaction link assembly weighs approximately 63.2 lb (28.7 kg).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Reaction Link Assembly Installation
Figure 401/32-11-71-990-801 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F73204 S0006574832_V3

Main Landing Gear Reaction Link Assembly Installation
Figure 401/32-11-71-990-801 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F73567 S0006574833_V2

Main Landing Gear Reaction Link Assembly Installation
Figure 401/32-11-71-990-801 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Reaction Link Assembly Installation
Figure 401/32-11-71-990-801 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F78615 S0006574835_V2

Main Landing Gear Reaction Link Assembly Installation
Figure 401/32-11-71-990-801 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

W03590 S0006574836_V3

Main Landing Gear Reaction Link Assembly Installation
Figure 401/32-11-71-990-801 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-71-420-801

3. Main Landing Gear Reaction Link Assembly Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
29-09-00-860-801	Hydraulic Reservoirs Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)
32-32-51-400-801	Main Gear Downlock Actuator Installation (P/B 401)
32-32-91-400-801	Main Gear Downlock Spring Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1359	Wrench Adapter, C32029-3 or C32029-93 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1360	Wrench Adapter, C32029-4 or C32029-94 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1368	Thread Protector, C32029-12 or C32029-101 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1369	Thread Protector , C32029-13 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-11946	Wrench Adapter, C32029-31 or C32029-99 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description	Specification
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
11	Pin	32-32-51-01-003	LOM ALL
44	Pin	32-11-61-03-010	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Prepare for the Installation

SUBTASK 32-11-71-480-004

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

G. Main Landing Gear Reaction Link Assembly Installation

SUBTASK 32-11-71-420-001

(1) Do these steps to connect the reaction link assembly [1] to the trunnion [41]:

(a) Lubricate the chrome plated surfaces of the trunnion pin [40] and end cap [45] with grease, D00633.

> **WARNING** YOU MUST HAVE TWO PERSONNEL TO LIFT THIS COMPONENT. THE COMPONENT IS HEAVY. IF YOU DO NOT OBEY, INJURY TO PERSONNEL CAN OCCUR.

(b) Position the outboard end of the reaction link assembly [1] for attachment to the trunnion [41].

NOTE: The reaction link assembly weighs approximately 63.2 lb (28.7 kg).

(c) Put the trunnion pin [40] through the reaction link assembly [1] and trunnion [41].

(d) Install the end cap [45] on the trunnion pin [40].

(e) Put the crossbolt [39] through the trunnion pin [40] and end cap [45].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(f) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.
2) The threads and thread reliefs of the crossbolt [39].
3) The threads of the nut [43].
4) The faces of the washer [42].

(g) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(h) Install the washer [42] and nut [43] on the crossbolt [39].

(i) If it is necessary, loosen the nut [43] to the nearest castellation that aligns with the hole for the cotter pin [44].

(j) Install the cotter pin [44] in the crossbolt [39].

SUBTASK 32-11-71-020-014

(2) If it is previously removed, do the following steps to install the hanger link assembly [35] into the supporting structure:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.
2) The threads and thread reliefs of the hanger link assembly pin [46] and bolt [50].
3) The threads of the nut [49] and nut [52].
4) The faces of the washer [48] and washer [51].

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5) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(b) Prior to installation of the hanger link assembly pin [46], lubricate chrome plated surfaces with grease, D00633.

(c) Install the hanger link assembly pin [46] that supports the hanger link assembly [35] to the supporting structure, through the hanger link assembly [35].

(d) Install the washer [48] and nut [49] on the hanger link assembly pin [46].

(e) Use the wrench adapter, C32029-31 or C32029-99, SPL-11946, to hold the hanger link assembly pin [46] to tighten the nut [49].

(f) Tighten the nut [49] to 95 ft-lb (128.8 N·m) - 115 ft-lb (155.9 N·m) above run-on torque.

(g) If it is necessary, loosen the nut [49] to align the nearest castellation.

(h) Install the bolt [50] in the hanger link assembly pin [46].

(i) Install the cotter pin [53], nut [52], and washer [51] to the bolt [50].

(j) Tighten the nut [52] to 20 in-lb (2.3 N·m) - 24 in-lb (2.7 N·m) above run-on torque.

SUBTASK 32-11-71-420-002

(3) Do these steps to connect the reaction link assembly [1] to the hanger link assembly [35]:

(a) Lubricate the chrome plated surfaces of the hanger link pin [34] and end cap [27] with grease, D00633.

WARNING

YOU MUST HAVE TWO PERSONNEL TO LIFT THIS COMPONENT. THE COMPONENT IS HEAVY. IF YOU DO NOT OBEY, INJURY TO PERSONNEL CAN OCCUR.

(b) Put the inboard end of the reaction link assembly [1] in its position for attachment to the hanger link assembly [35].

(c) Put the hanger link pin [34] through the reaction link assembly [1] and hanger link assembly [35].

(d) Attach the assembly of the end cap [27], bracket assembly [38], hydraulic tube [2], electrical harnesses [12], spacers [32], and spacer [36] on each end of the hanger link pin [34].

(e) If it is necessary to connect the electrical harnesses [12], do this step:

1) Install the bolts for the bracket that holds the sensor to the upper lock link [5] to connect the electrical harnesses [12].

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

CAUTION	MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(f) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to the faces of the washer [26].

(g) Put the washer [26] on the crossbolt [25].

(h) Put the crossbolt [25] through the end caps [27].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(i) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.
2) The threads and thread reliefs of the crossbolt [25].
3) The threads of the nut [29].
4) The faces of the washer [30].

(j) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(k) Install the washer [30] and nut [29] on the crossbolt [25].

(l) Tighten the nut [29] to 30 in-lb (3.4 N·m) - 50 in-lb (5.6 N·m).

(m) If it is necessary, loosen the nut [29] to the nearest castellation that aligns with the hole for the cotter pin [28].

(n) Install the cotter pin [28] in the crossbolt [25].

(o) Put the pin assembly [31] through the bracket assembly [38] and reaction link assembly [1].

SUBTASK 32-11-71-420-003

(4) Do these steps to connect the reaction link assembly [1] to the upper side strut [21]:

(a) Lubricate the chrome plated surfaces of the side strut pin [20] with grease, D00633.

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WARNING YOU MUST HAVE TWO PERSONNEL TO LIFT THIS COMPONENT. THE COMPONENT IS HEAVY. IF YOU DO NOT OBEY, INJURY TO PERSONNEL CAN OCCUR.

(b) Remove the strap that supports the upper side strut [21] to the hanger link assembly [35].

(c) Position the upper side strut [21] for attachment to the reaction link assembly [1].

(d) Put the side strut pin [20] through the upper side strut [21] and reaction link assembly [1].

1) Use the thread protector, C32029-12 or C32029-101, SPL-1368, when you do this step.

WARNING USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.

2) The threads and thread reliefs of the side strut pin [20] and crossbolt [17].

3) The threads of the side strut nut [18] and nut [22].

4) The faces of the side strut washer [19] and washer [24].

(f) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(g) Install the side strut washer [19] and side strut nut [18] on the side strut pin [20].

(h) Tighten the side strut nut [18] to 600 in-lb (67.8 N·m) - 900 in-lb (101.7 N·m).

1) Use the wrench adapter, C32029-3 or C32029-93, SPL-1359, to hold the head of the side strut pin [20] when you tighten the side strut nut [18].

(i) If it is necessary, loosen the side strut nut [18] to the nearest castellation that aligns with the hole for the crossbolt [17].

(j) Install the crossbolt [17] in the side strut pin [20].

(k) Install the washer [24] and nut [22] on the crossbolt [17].

(l) Tighten the nut [22] to 30 in-lb (3.4 N·m) - 50 in-lb (5.6 N·m).

(m) If it is necessary, loosen the nut [22] to the nearest castellation that aligns with the hole for the cotter pin [23].

(n) Install the cotter pin [23] in the crossbolt [17].

SUBTASK 32-11-71-420-004

(5) Do these steps to connect the reaction link assembly [1] to the upper lock link [5]:

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(a) Lubricate the chrome plated surfaces of the downlock link pin [13] with grease, D00633.

(b) Position the upper lock link [5] for attachment to the reaction link assembly [1].

(c) Put the downlock link pin [13] through the upper lock link [5] and reaction link assembly [1].

1) Use the thread protector, C32029-13, SPL-1369, when you do this task.

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(d) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to these items:

1) Do not apply corrosion preventive compound to the chrome plated surfaces.

2) The threads and thread reliefs of the downlock link pin [13].

3) The threads of the nut [15].

4) The faces of the washer [14].

(e) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

(f) Install the washer [14] and nut [15] on the downlock link pin [13].

(g) Tighten the nut [15] to 360 in-lb (40.7 N·m) - 600 in-lb (67.8 N·m).

1) Use the wrench adapter wrench adapter, C32029-4 or C32029-94, SPL-1360, to hold the head of the downlock link pin [13] when you tighten the nut [15].

(h) If it is necessary, loosen the nut [15] to the nearest castellation that aligns with the hole for the cotter pin [16].

(i) Install the cotter pin [16] in the downlock link pin [13].

SUBTASK 32-11-71-640-001

(6) Do these steps to connect the downlock actuator [4] to the reaction link assembly [1]:

(a) Lubricate the inside surface of the lug, head end of the downlock actuator [4], and rod end pin [6] with grease, D00633.

1) If grease, D00633, is not available, use grease, D00013.

(b) Position the head end of the downlock actuator [4] for attachment to the reaction link assembly [1].

1) If it is necessary, retract or extend the downlock actuator [4] to align the head end to the reaction link assembly [1].

(c) Put the rod end pin [6] through the reaction link assembly [1], washers [7], washers [8], and head end of the downlock actuator [4].

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(d) Install the washer [9] and nut [10] on the rod end pin [6].

(e) Tighten the nut [10] to 15 in-lb (1.7 N·m) - 25 in-lb (2.8 N·m).

(f) If it is necessary, loosen the nut [10] to the nearest castellation that aligns with the hole for the cotter pin [11].

(g) Install the cotter pin [11] in the rod end pin [6].

SUBTASK 32-11-71-420-005

(7) Do these steps to connect the hydraulic tubes [2] to the downlock actuator [4]:

(a) Remove the caps from the unions in the ports of the downlock actuator [4].

(b) Remove the caps from the hydraulic tubes [2] and connect them to the downlock actuator [4].

(c) Tighten the hydraulic tubes [2] to 140 ±7 in-lb (15.8 ±0.8 N·m).

(d) Loosen the hydraulic tubes [2] and re-tighten them to 133 in-lb (15.0 N·m) - 147 in-lb (16.6 N·m).

SUBTASK 32-11-71-420-006

(8) Do these steps to connect the hydraulic line [37] and hydraulic line [37A] to the hydraulic tubes [2] that are attached to the bracket assembly [38]:

(a) Remove the caps from the hydraulic line [37] and hydraulic line [37A].

(b) Connect the hydraulic line [37] and hydraulic line [37A] to the hydraulic tubes [2].

(c) Tighten the hydraulic line [37] to 140 ±7 in-lb (15.8 ±0.8 N·m).

(d) Tighten the hydraulic line [37A] to 270 ±14 in-lb (30.5 ±1.6 N·m).

H. Main Landing Gear Reaction Link Assembly Installation Test

SUBTASK 32-11-71-420-007

(1) Do this task: Main Gear Downlock Spring Installation, TASK 32-32-91-400-801.

SUBTASK 32-11-71-710-001

(2) Do this task: Main Gear Downlock Actuator Installation, TASK 32-32-51-400-801.

SUBTASK 32-11-71-860-006

(3) Do this task: Hydraulic Reservoirs Pressurization, TASK 29-09-00-860-801.

SUBTASK 32-11-71-860-004

(4) Do this task: Main Landing Gear Operational Test, TASK 32-32-00-710-801.

NOTE: If a hydraulic cart is not available, it is optional to perform the Main Landing Gear Test - Component Replacement, TASK 32-32-00-710-802 instead of the operational test.

SUBTASK 32-11-71-210-001

(5) Do a check of the hydraulic connections for leakage.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-71-860-002

(1) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-71-580-003

(2) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR HYDRAULIC SHIMMY DAMPER COMPONENTS - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the compensator assembly for the hydraulic shimmy damper on the main landing gear

(2) An installation of the compensator assembly for the hydraulic shimmy damper on the main landing gear

(3) A removal of the manifold assembly for the hydraulic shimmy damper on the main landing gear

(4) An installation of the manifold assembly for the hydraulic shimmy damper on the main landing gear

(5) A removal of the end gland assembly for the hydraulic shimmy damper on the main landing gear

(6) An installation of the end gland assembly for the hydraulic shimmy damper on the main landing gear.

TASK 32-11-81-000-803

2. Main Landing Gear Shimmy Damper Compensator Removal

(Figure 201)

A. General

(1) This procedure provides instructions to remove the compensator assembly from the hydraulic shimmy damper on the main landing gear torsion links.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-81-480-009

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-81-480-010

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-81-860-005

(3) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-81-860-011

(4) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

E. Main Landing Gear Compensator Assembly Removal

SUBTASK 32-11-81-020-006

(1) Remove the lockwire from the compensator assembly [16].

SUBTASK 32-11-81-020-007

(2) Remove the compensator assembly [16] from the manifold assembly [4] on the shimmy damper [1].

(a) Remove the packing [14], backup ring [13], and backup ring [15] from the compensator assembly [16].

1) Discard the packing [14], backup ring [13], and backup ring [15].

SUBTASK 32-11-81-480-011

(3) Install a plug in the port of the manifold assembly [4] for the compensator assembly [16].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Shimmy Damper Component Installation
Figure 201/32-11-81-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Shimmy Damper Component Installation
Figure 201/32-11-81-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Shimmy Damper Component Installation
Figure 201/32-11-81-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-81-400-802

3. Main Landing Gear Shimmy Damper Compensator Installation

(Figure 201)

A. General

(1) This procedure provides instructions to install the compensator assembly for the hydraulic shimmy damper on the main landing gear torsion links.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-11-81-870-801	Hydraulic Shimmy Damper - Bleeding (P/B 401)

C. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G01912	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50375	Kit - Safety Cable, 321 CRES - 0.032 Inch (0.81 mm) Diameter, (Contains both Cable and Ferrule)	BACC13AT3K, AMS 5689

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
13	Backup ring	32-11-81-01-197	LOM ALL
14	Packing	32-11-81-01-195	LOM ALL
15	Backup ring	32-11-81-01-197	LOM ALL
16	Compensator assembly	32-11-81-01-105	LOM ALL
		32-11-81-01-110	LOM ALL
		32-11-81-01-235	LOM ALL

E. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Main Landing Gear Compensator Assembly Installation

SUBTASK 32-11-81-480-012

(1) Remove the plug from the manifold assembly [4] on the shimmy damper [1], if one is installed.

SUBTASK 32-11-81-420-009

(2) Make sure that the new packing [14], new backup ring [13], and new backup ring [15] are installed on the compensator assembly [16].

SUBTASK 32-11-81-420-010

(3) Lubricate the thread area of the compensator assembly [16], packing [14], backup ring [13], and backup ring [15] with hydraulic fluid, D00153.

SUBTASK 32-11-81-420-011

(4) Install the compensator assembly [16] in its location in the manifold assembly [4].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-81-420-012

(5) Tighten the compensator assembly [16] to 385 ±19 in-lb (43.5 ±2.1 N·m).

SUBTASK 32-11-81-420-013

(6) Install MS20995NC32 lockwire, G01912, or safety safety cable kit, G50375, on the heads of the screws.

SUBTASK 32-11-81-420-014

(7) Do this task: Hydraulic Shimmy Damper - Bleeding, TASK 32-11-81-870-801.

(a) Look for leaks at the compensator connection when you bleed the shimmy damper [1].

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-81-480-013

(1) Remove the chocks from around the landing gear tires.

SUBTASK 32-11-81-860-006

(2) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

TASK 32-11-81-000-804

4. Main Landing Gear Shimmy Damper Manifold Assembly Removal

(Figure 201)

A. General

(1) This procedure provides instructions to remove the manifold assembly from the hydraulic shimmy damper on the main landing gear torsion links.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-81-480-014

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-81-480-015

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-81-860-007

(3) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-81-860-012

(4) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

E. Main Landing Gear Manifold Assembly Removal

SUBTASK 32-11-81-020-008

(1) Disconnect the hydraulic line from the manifold assembly [4] on the hydraulic shimmy damper [1].

SUBTASK 32-11-81-020-009

(2) If the replacement manifold assembly [4] does not have a hydraulic reducer [2] installed, do these steps:

(a) Remove the hydraulic reducer [2] and the packing [3].

(b) Discard the packing [3].

SUBTASK 32-11-81-480-016

(3) Do these steps to remove the manifold assembly [4]:

(a) Remove the bolts [5] and the washers [6] that connect the manifold assembly [4] to the shimmy damper [1].

(b) Remove the manifold assembly [4] from the shimmy damper [1].

(c) Remove the transfer tube [12] from its location.

NOTE: The transfer tube can be in the manifold assembly or the port for the manifold assembly.

(d) Remove the packings [10] and the backup rings [9,11] from the transfer tube [12] and discard.

END OF TASK

TASK 32-11-81-400-803

5. Main Landing Gear Shimmy Damper Manifold Assembly Installation

(Figure 201)

A. General

(1) This procedure provides instructions to install the manifold assembly on the hydraulic shimmy damper on the main landing gear.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-11-81-870-801	Hydraulic Shimmy Damper - Bleeding (P/B 401)

C. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Packing	32-11-81-01-100	LOM ALL
9,11	Ring	32-11-81-01-290	LOM ALL
10	Packing	32-11-81-01-285	LOM ALL

E. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Main Landing Gear Manifold Assembly Installation

SUBTASK 32-11-81-420-015

(1) Make sure the matting surfaces on the manifold assembly [4] and on the shimmy damper [1] are clean.

SUBTASK 32-11-81-480-017

(2) Remove the plug from the new manifold assembly [4] and from the shimmy damper [1], if they are installed.

SUBTASK 32-11-81-480-018

(3) Do these steps to install the transfer tube [12]:

(a) Install the new packing [10]and the new rings [9,11]on the transfer tube [12] in their two locations.

(b) Lubricate the transfer tube transfer tube [12], the packings [10], and the backup rings [9,11] with hydraulic fluid, D00153.

(c) Install the transfer tube transfer tube [12] in its location in the shimmy damper [1].

SUBTASK 32-11-81-480-019

(4) Do these steps to install the manifold assembly [4]:

(a) Put the manifold assembly [4] in its location on the shimmy damper [1] (and the transfer tube [12]).

(b) Install the bolts [5] and the washers [6] to connect the manifold assembly [4] to the shimmy damper [1].

NOTE: The Shimmy Damper Housing contains inserts at the manifold bolt locations.

(c) Install lockwire on the compensator to the closest bolt [5] for the manifold assembly [4].

SUBTASK 32-11-81-020-010

(5) If the new manifold assembly [4] does not have a reducer [2] installed, do these steps:

(a) Remove the plug from the port in the manifold assembly, if one is installed.

(b) Lubricate the hydraulic reducer [2] and the new packing [3] with hydraulic fluid, D00153.

(c) Install the packing [3] on the hydraulic reducer [2].

(d) Install the reducer [2] in the manifold assembly [4].

SUBTASK 32-11-81-480-020

(6) Remove the cap from the reducer [2], if one is installed.

SUBTASK 32-11-81-420-016

(7) Connect the hydraulic line to the manifold assembly [4] on the hydraulic shimmy damper [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-81-420-017

(8) Do this task: Hydraulic Shimmy Damper - Bleeding, TASK 32-11-81-870-801.

(a) Look for leaks at the manifold connection and the hydraulic line connection when you bleed the shimmy damper [1].

G. Put the Airplane Back to its Usual Condition

SUBTASK 32-11-81-480-021

(1) Remove the chocks from around the landing gear tires.

SUBTASK 32-11-81-860-008

(2) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

——— END OF TASK ———

TASK 32-11-81-000-805

6. Main Landing Gear Shimmy Damper End Gland Assembly Removal

(Figure 201)

A. General

(1) This procedure provides instructions to remove the end gland assembly from the hydraulic shimmy damper on the main landing gear torsion links.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-81-480-022

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-81-480-023

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-11-81-860-009

(3) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-81-860-013

(4) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

E. Main Landing Gear End Gland Assembly Removal

SUBTASK 32-11-81-020-023

(1) Carefully loosen and remove the bleed plugs [7] to release the pressure in the shimmy damper [1].

(a) Remove and discard the packings [8].

SUBTASK 32-11-81-020-011

(2) Remove the bolts [22] and washers [23] that hold the retainers [24] to the end gland assembly [18].

SUBTASK 32-11-81-020-012

(3) Remove the retainers [24] from the end gland assembly [18].

SUBTASK 32-11-81-020-013

(4) Remove the shear wire [19] from the inner diameter of the shimmy damper [1].

(a) Discard the shear wire [19].

SUBTASK 32-11-81-020-014

(5) Remove the end gland assembly [18] from the shimmy damper [1].

SUBTASK 32-11-81-480-024

(6) Put a covering on the end of the shimmy damper [1] for protection.

END OF TASK

TASK 32-11-81-400-804

7. Main Landing Gear Shimmy Damper End Gland Assembly Installation

(Figure 201)

A. General

(1) This procedure provides instructions to install the end gland assembly for the hydraulic shimmy damper on the main landing gear torsion links.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-11-81-870-801	Hydraulic Shimmy Damper - Bleeding (P/B 401)

C. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
8	Packing	32-11-81-01-305	LOM ALL
19	Shear wire	32-11-81-01-310	LOM ALL
20	Excluder	32-11-81-01-330	LOM ALL
21	Seal	32-11-81-01-335	LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
25	Packing	32-11-81-01-315	LOM ALL
26	Ring	32-11-81-01-320	LOM ALL

E. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Main Landing Gear End Gland Assembly Installation

SUBTASK 32-11-81-480-025

(1) If the seals for the end gland assembly [18] are not installed, do these steps:

(a) Install the new excluder [20] in the inside groove closest to the outside face of the end gland assembly [18].

(b) Install the new seal [21] in the inside groove closest to the inside face of the end gland assembly [18].

(c) Install the new packing [25] and new rings [26] in the outside groove on the end gland assembly [18].

SUBTASK 32-11-81-480-026

(2) If it is installed, remove the covering from the end of the shimmy damper [1].

SUBTASK 32-11-81-480-027

(3) Lubricate all of the seals for the end gland assembly [18] with hydraulic fluid, D00153.

SUBTASK 32-11-81-020-015

(4) Install the end gland assembly [18] in the shimmy damper [1].

(a) Make sure that the backup rings stay in their location.

SUBTASK 32-11-81-020-016

(5) Install the new shear wire [19] on the inner diameter of the shimmy damper [1].

NOTE: The shear wire must be in the groove in the end gland assembly, and the groove in the inner diameter of the shimmy damper.

SUBTASK 32-11-81-020-017

(6) Put the retainers [24] in their position on the end gland assembly [18].

SUBTASK 32-11-81-020-018

(7) Install the bolts [22] and washers [23] to hold the retainers [24] to the end gland assembly [18].

SUBTASK 32-11-81-390-001

(8) Lightly lubricate the new packings [8] with hydraulic fluid, D00153.

SUBTASK 32-11-81-420-024

(9) Install the packings [8] on the bleed plugs [7].

SUBTASK 32-11-81-420-025

(10) Install the bleed plugs [7] on the shimmy damper [1].

SUBTASK 32-11-81-420-018

(11) Do this task: Hydraulic Shimmy Damper - Bleeding, TASK 32-11-81-870-801.

(a) Look for leaks at the end gland assembly [18] interface when you bleed the shimmy damper [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-81-480-028

(1) Remove the chocks from around the landing gear tires.

SUBTASK 32-11-81-860-010

(2) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR HYDRAULIC SHIMMY DAMPER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the hydraulic shimmy damper from the main landing gear

(2) An installation of the hydraulic shimmy damper on the main landing gear

(3) Bleed the hydraulic shimmy damper on the main landing gear

TASK 32-11-81-000-801

2. Main Landing Gear Shimmy Damper Removal

(Figure 401)

A. General

(1) This task provides instructions to remove the hydraulic shimmy damper from the torsion links.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-51-020-801	Main Landing Gear Torsion Link Disconnection (P/B 401)
32-45-11-000-801	Main Landing Gear Wheel and Tire Assembly Removal (P/B 401)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Packing	32-11-81-01-100	LOM ALL

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Removal

SUBTASK 32-11-81-480-030

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-81-480-002

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-11-81-860-001

(3) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-81-860-014

(4) For the A and B hydraulic system, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

F. Main Landing Gear Hydraulic Shimmy Damper Removal

SUBTASK 32-11-81-020-001

(1) Disconnect the hydraulic line from the manifold assembly [2] on the shimmy damper assembly [1].

SUBTASK 32-11-81-020-002

(2) If the replacement shimmy damper assembly [1] does not have a reducer [3] installed in the manifold assembly [2], do these steps:

(a) Remove the reducer [3] and packing [4] from the shimmy damper assembly [1].

(b) Discard the packing [4].

(c) Install the reducer [3] with a cap and new packing [4] in the port of the manifold assembly [2] of the replacement shimmy damper assembly [1].

(d) As an alternative, install a plug in the port of the manifold assembly [2].

SUBTASK 32-11-81-020-024

(3) Remove the left hand inboard or right hand outboard wheel and tire assembly, do this task: Main Landing Gear Wheel and Tire Assembly Removal, TASK 32-45-11-000-801.

SUBTASK 32-11-81-020-003

(4) Do this task: Main Landing Gear Torsion Link Disconnection, TASK 32-11-51-020-801.

SUBTASK 32-11-81-020-004

(5) Remove the shimmy damper assembly [1] from the upper torsion link [18].

(a) Remove the lockwire from the bolts [16].

(b) Remove the bolts [16], washers [17], washers [22], and straight sleeve [21] that holds the shimmy damper assembly [1] to the upper torsion link [18].

NOTE: The washer [22] may not be on all aircraft. The washer [22] can be used on all aircraft. Refer to 737-SL-32-135.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Shimmy Damper Installation
Figure 401/32-11-81-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 MAY NOT BE ON ALL AIRCRAFT, BUT CAN BE USED ON ALL AIRCRAFT, SEE 737-SL-32-135.

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Main Landing Gear Shimmy Damper Installation
Figure 401/32-11-81-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-81-400-801

3. Main Landing Gear Shimmy Damper Installation

(Figure 401)

A. General

(1) This procedure provides instructions to install the hydraulic shimmy damper for the main landing gear on the torsion links.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-11-51-400-803	Main Landing Gear Torsion Link Connection (P/B 401)
32-45-11-400-801	Main Landing Gear Wheel and Tire Assembly Installation (P/B 401)

C. Consumable Materials

Reference	Description	Specification
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38
G50347	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Packing	32-11-81-01-100	LOM ALL
11	Pin	32-11-81-01-020	LOM ALL

E. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Main Landing Gear Hydraulic Shimmy Damper Installation

SUBTASK 32-11-81-420-002

(1) Prepare the following parts for installation:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of Cor-Ban 27L Compound, G50237, to the thread reliefs, threads of the bolt [16], faces of the washer [17] and washer [22], the inside diameter of the straight sleeve [21] and the threads inside the shimmy damper attach holes.

NOTE: If Cor-Ban 27L Compound, G50237, is not available, you can use corrosion inhibiting material, G50136, as an approved alternate.

NOTE: The washer [22] may not be on all aircraft. The washer [22] can be used on all aircraft. Refer to 737-SL-32-135.

(b) Apply a thin layer of grease, D00633, to the outside diameter of the straight sleeve [21].

1) Make sure that you install the bolt [16], washer [17], washer [22], and straight sleeve [21] immediately while the compound is wet.

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(c) Apply a thin layer of primer, C00259, Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136, to the shimmy damper face common to the upper torsion link.

1) Make sure that no compound is in or on the piston shaft of the damper.

(d) Remove excess compound.

SUBTASK 32-11-81-420-020

(2) Hold the hydraulic shimmy damper assembly [1] in its location on the upper torsion link [18].

SUBTASK 32-11-81-420-003

CAUTION

MAKE SURE THAT YOU INSTALL THE SLEEVES IN THE CORRECT LOCATIONS. IF YOU INSTALL THE SLEEVES IN THE INCORRECT LOCATIONS, VIBRATION CAN CAUSE DAMAGE TO COMPONENTS OF LANDING GEAR.

(3) Loosely install the bolts [16], washers [17], washers [22], and straight sleeve [21] to hold the hydraulic shimmy damper to the upper torsion link [18].

NOTE: The shimmy damper installation has a straight sleeve and a tapered sleeve. The straight sleeve is longer than the tapered sleeve.

SUBTASK 32-11-81-420-004

CAUTION

MAKE SURE THAT YOU INSTALL THE SLEEVES IN THE CORRECT LOCATIONS. IF YOU INSTALL THE SLEEVES IN THE INCORRECT LOCATIONS, VIBRATION CAN CAUSE DAMAGE TO COMPONENTS OF LANDING GEAR.

(4) Do this task: Main Landing Gear Torsion Link Connection, TASK 32-11-51-400-803.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) When you connect the torsion links, do not tighten the apex nut [9] completely or install the retention bolt [8] for the apex nut [9].

SUBTASK 32-11-81-420-022

(5) Tighten the bolts [16] for the hydraulic shimmy damper, in a cross pattern, to 450 in-lb (50.8 N·m) - 550 in-lb (62.1 N·m).

(a) Install MS20995NC32 lockwire, G50347, on the bolts [16] with the double-twist method.

SUBTASK 32-11-81-420-019

(6) Tighten the apex nut [9] to 50 ft-lb (67.8 N·m) - 58 ft-lb (78.6 N·m).

(a) Advance the apex nut [9] to the nearest castellation that aligns with the hole in the apex pin [19].

(b) Tighten the apex nut [9] to a final torque of 150 ft-lb (203.4 N·m) maximum.

(c) Install the retention bolt [8], washers [10], nut [12], and new pin [11].

SUBTASK 32-11-81-020-005

(7) If the new hydraulic shimmy damper assembly [1] does not have a reducer [3] and new packing [4] installed in the manifold assembly [2], do these steps:

(a) Remove the plug from the port in the manifold assembly [2], if one is installed.

(b) Lubricate the hydraulic reducer [3] and packing [4] with hydraulic fluid, D00153.

(c) Install the packing [4] on the hydraulic reducer [3].

(d) Install the reducer [3] in the manifold assembly [2].

SUBTASK 32-11-81-480-004

(8) Remove the cap on the reducer [3], if one is installed.

SUBTASK 32-11-81-420-007

(9) Connect the hydraulic line to the reducer [3] on the shimmy damper manifold assembly [2].

SUBTASK 32-11-81-420-026

(10) Install the left hand inboard or right hand outboard wheel and tire assembly, do this task: Main Landing Gear Wheel and Tire Assembly Installation, TASK 32-45-11-400-801.

SUBTASK 32-11-81-420-008

(11) Do this task: Hydraulic Shimmy Damper - Bleeding, TASK 32-11-81-870-801.

(a) Look for leaks at the hydraulic connection when you bleed the shimmy damper assembly [1].

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-81-860-002

(1) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-81-870-801

4. Hydraulic Shimmy Damper - Bleeding

(Figure 401)

A. General

(1) This task provides instructions to bleed the hydraulic shimmy damper.

(2) The hydraulic shimmy damper has an internal piston with areas for hydraulic fluid on the two sides of the piston. To bleed the shimmy damper it is necessary to remove the air from the two fluid areas.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Consumable Materials

Reference	Description	Specification
G50347	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
6	Packing	32-11-81-01-305	LOM ALL
		32-32-51-01-024	LOM ALL

E. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Hydraulic Shimmy Damper Bleeding

SUBTASK 32-11-81-480-006

> **WARNING**
> MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-81-860-003

(2) If the bleed plugs [5] need new packings [6], do these steps:

(a) For the A hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(b) Remove the lockwire from the bleed plugs [5].

(c) Remove the bleed plug [5] from the shimmy damper assembly [1].

NOTE: Hydraulic return pressure that remains after you have depressurized system A will force fluid out the bleed port when you remove the bleed plug.

(d) Install the packing [6] on the bleed plug [5].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(e) Install the bleed plug [5] in its location on the shimmy damper assembly [1].

(f) Tighten the bleed plug [5] to 140 ±14 in-lb (16 ±2 N·m).

SUBTASK 32-11-81-790-001

WARNING	KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU PUT THE AIRPLANE IN AIR MODE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) For the A hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-11-81-480-008

(4) Make sure that the tires have chocks installed around them.

SUBTASK 32-11-81-840-001

(5) Do the steps that follow to bleed the air from the shimmy damper assembly [1] at the two bleed plugs [5]:

(a) Bleed one side of the hydraulic shimmy damper piston:

NOTE: The shimmy damper hydraulic pressure is supplied from the return lines of hydraulic system (system A), to bleed the damper it is necessary to cycle the landing gear control lever.

WARNING	MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

1) Move the landing gear control handle to the UP position.

2) Open one of the two bleed plugs [5].

NOTE: You can open either the left or the right bleed plugs.

3) Move the landing gear control handle to the DOWN position.

4) Close the bleed plug [5] to 140 ±14 in-lb (16 ±2 N·m).

(b) Continue to move the landing gear control handle and open and close the bleed plug as stated above until the air is gone from the fluid flow.

(c) Bleed the other side of the hydraulic shimmy damper piston through the bleed plug that remains:

1) Do the steps that follow to bleed the shimmy damper assembly [1] from the other bleed plug [5]:

a) Move the landing gear control handle to the UP position.

b) Open the other bleed plug [5].

c) Move the landing gear control handle to the DOWN position.

d) Close the bleed plug [5] to 140 ±14 in-lb (16 ±2 N·m).

(d) Continue to move the landing gear control handle and open and close the bleed plug as stated above until the air is gone from the fluid flow.

SUBTASK 32-11-81-420-023

(6) Install the MS20995NC32 lockwire, G50347, on the bleed plugs [5] using the double twist method.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-81-860-004

(7) For the A hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-81-860-015

(8) Check the PSEU for faults generated by the bleeding procedure and clear them.

NOTE: When the landing gear control lever is moved to bleed the shimmy damper, the gear lock sensors will not transition their state. This will cause faults to be stored in the PSEU and cause the PSEU light to illuminate.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR SHIMMY DAMPER AND TORSION LINK APEX ASSEMBLY - INSPECTION/CHECK

1. General

A. This task gives the data for a dimensional inspection and wear limits for the hydraulic shimmy damper and torsion link apex assembly of the main landing gear.

B. This task does not remove or install the hydraulic shimmy damper. Refer to the Main Landing Gear Hydraulic Shimmy Damper - Removal/Installation for procedures to remove and install the hydraulic shimmy damper of the main landing gear.

C. This task does not remove or install the torsion link apex assembly. Refer to the Main Landing Gear Torsion Link Assembly - Removal/Installation for procedures to remove and install the torsion link apex assembly.

TASK 32-11-81-200-801

2. Main Landing Gear Hydraulic Shimmy Damper and Torsion Link Assembly Inspection

(Figure 601)

A. General

(1) This procedure gives the wear limits and repair data for the shimmy damper and the torsion link apex assembly of the main landing gear.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-51-000-801	Main Landing Gear Upper Torsion Link Removal (P/B 401)
32-11-51-000-802	Main Landing Gear Lower Torsion Link Removal (P/B 401)
32-11-51-400-801	Main Landing Gear Upper Torsion Link Installation (P/B 401)
32-11-51-400-802	Main Landing Gear Lower Torsion Link Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1096	Micrometer - Depth, 0-1 inch, Readable to 1/1000 inch
STD-1097	Caliper - Vernier, 0-6 inch, Readable to 1/1000 inch

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Procedure

SUBTASK 32-11-81-480-029

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. IF THE LANDING GEAR PINS ARE NOT INSTALLED, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-81-020-019

(2) To remove or to get access to the torsion link assembly of the main landing gear do the tasks that follow(Figure 601):

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(a) Do this task: Main Landing Gear Upper Torsion Link Removal, TASK 32-11-51-000-801.

(b) Do this task: Main Landing Gear Lower Torsion Link Removal, TASK 32-11-51-000-802.

SUBTASK 32-11-81-020-020

(3) Use these tools to check for wear on the parts of the main landing gear shimmy damper and the torsion link apex assembly:

(a) micrometer (0-1 inch, readable to 1/1000 inch), STD-1096

(b) vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

SUBTASK 32-11-81-020-021

(4) To examine the parts of the main landing gear shimmy damper and the torsion link apex assembly for worn areas, do the steps that follow:

(a) Remove the parts to be checked.

(b) Measure the parts as necessary with a micrometer (0-1 inch, readable to 1/1000 inch), STD-1096 or a vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

(c) Compare the dimensions you measured with the permitted wear limits in Figure 601.

(d) If the parts do not agree with the limits, repair or replace the part as shown in Figure 601.

SUBTASK 32-11-81-020-022

(5) To install the torsion link apex assembly or parts for the main landing gear do the tasks that follow:

(a) Do this task: Main Landing Gear Upper Torsion Link Installation, TASK 32-11-51-400-801.

(b) Do this task: Main Landing Gear Lower Torsion Link Installation, TASK 32-11-51-400-802.

END OF TASK

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LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

A

J94810 S0000186548_V2

Main Landing Gear Shimmy Damper Inspection/Check
Figure 601/32-11-81-990-803 (Sheet 1 of 4)

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A-A

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Main Landing Gear Shimmy Damper Inspection/Check
Figure 601/32-11-81-990-803 (Sheet 2 of 4)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR
			DIAMETER		PERMITTED WEAR DIMENSION INCHES (mm)	MAXIMUM DIAMETER CLEARANCE INCHES (mm)			
			MINIMUM INCHES (mm)	MAXIMUM INCHES (mm)					
[1]	BUSHINGS	WIDTH	2.4355 (61.86)	2.4430 (62.05)	2.4300 (61.72)	N/A	X		2
[2]	SPACER	WIDTH	0.3500 (8.89)	0.3600 (9.14)	0.3500 (8.89)	N/A	X		
[3]	STRAIGHT SLEEVE	LENGTH	2.9300 (74.42)	2.9400 (74.67)	2.9300 (74.42)	N/A	X		
[4]	BUSHING	WIDTH	2.5855 (65.67)	2.5925 (65.85)	2.5800 (65.32)	N/A	X		3
	TAPERED SLEEVE	LENGTH	2.5950 (65.91)	2.6050 (66.17)	2.5950 (65.91)	N/A	X		
[5]	BOLT	OD	1.1225 (28.51)	1.1240 (28.54)	1.1200 (28.49)	0.010 (0.25)		X	1
	STRAIGHT SLEEVE	ID	1.1260 (28.60)	1.1280 (28.65)	1.1300 (28.70)				
[6]	STRAIGHT SLEEVE	OD	1.3720 (34.85)	1.3740 (34.90)	1.3710 (34.82)	0.0065 (0.165)	X		
	BUSHING	ID	1.3750 (34.93)	1.3762 (34.96)	1.3775 (34.99)		X		
[7]	BOLT	OD	1.1225 (28.51)	1.1240 (28.55)	1.1200 (28.45)	0.0100 (0.254)		X	1
	TAPERED SLEEVE	ID	1.1260 (28.60)	1.1280 (28.66)	1.1300 (28.70)		X		
[8]	TAPERED SLEEVE	OD	1.3710 (34.82)	1.3730 (34.88)	1.3700 (34.80)	0.0075 (0.191)	X		
	BUSHING	ID	1.3750 (34.93)	1.3762 (34.96)	1.3775 (34.99)		X		

TABLE A

M45155 S0006574866_V3

Main Landing Gear Shimmy Damper Inspection/Check
Figure 601/32-11-81-990-803 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR
			DIAMETER		PERMITTED WEAR DIMENSION INCHES (mm)	MAXIMUM DIAMETER CLEARANCE INCHES (mm)			
			MINIMUM INCHES (mm)	MAXIMUM INCHES (mm)					
[9]	DAMPER STROKE	GAP	0.000 (0.000)	0.5045 (12.81)	N/A	0.5150 (13.08)	X		5
[10]	LOWER TORSION LINK GAP	GAP	0.0025 (0.06)	0.0195 (0.49)	N/A	0.0250 (0.635)	X		4

TABLE A

NOTE:

DIMENSIONS ARE IN INCHES (MILLIMETERS ARE IN PARENTHESES)

1. THE WORN PART IS REPAIRABLE. REFER TO THE SOPM.
2. WIDTH IS THE DISTANCE BETWEEN THE BUSHING FLANGE FACES OF THE UPPER TORSION LINK.
3. WIDTH IS THE DISTANCE BETWEEN THE BUSHING FLANGE FACES OF THE LOWER TORSION LINK.
4. THE MAXIMUM GAP IS MEASURED WITH A FEELER GAGE.
5. THE GAP CAN HAVE A RANGE WITHIN THE LIMITS SHOWN AND IS DEPENDENT ON THE POSITION OF THE SHIMMY DAMPER PISTON ALONG ITS STROKE.

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Main Landing Gear Shimmy Damper Inspection/Check
Figure 601/32-11-81-990-803 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR FORWARD TRUNNION BEARING ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) A removal of the forward trunnion bearing assembly for the main landing gear

(2) An installation of the forward trunnion bearing assembly for the main landing gear.

TASK 32-11-83-000-801

2. Main Landing Gear Forward Trunnion Bearing Assembly Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-00-000-801	Main Landing Gear Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1868	Puller - Fuse Pin, Main Landing Gear Forward Trunnion Support Part #: C32015-34 Supplier: 81205 Opt Part #: C32015-1 Supplier: 81205

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
551	Left Wing - Rear Spar To Landing Gear Support Beam
651	Right Wing - Rear Spar to Landing Gear Support Beam
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-83-480-001

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-83-020-001

(2) Do this task: Main Landing Gear Removal, TASK 32-11-00-000-801.

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SUBTASK 32-11-83-020-008

(3) Remove the fairlead [13] and fairlead [24] from the bracket to access the forward trunnion bearing assembly [1].

NOTE: Optional to suspend the fairlead [13] and fairlead [24] on the cables.

(a) Remove the bolts [14], washers [15] and nuts [16] to remove the fairlead [13] from the bracket.

(b) Remove the bolts [25], washers [26] and nuts [27] to remove the fairlead [24] from the bracket.

SUBTASK 32-11-83-020-009

(4) Remove the clamp block assemblies [17] to access the forward trunnion bearing assembly [1].

(a) Remove the screws [18], washers [19] and spacers [20] from the clamp block assemblies [17] and nutplates [23].

(b) Remove the channels [21] and clamp blocks [22] from the tubing.

E. Main Landing Gear Forward Trunnion Bearing Assembly Removal

SUBTASK 32-11-83-020-007

(1) Remove the clamp [10] from the hydraulic flow regulator, do this step:

(a) Remove the screws [11] and washers [12].

SUBTASK 32-11-83-020-002

(2) Remove the forward trunnion bearing assembly [1], do these steps:

(a) Remove the nuts [2], washers [5] and the fuse pin caps [3] on each end of the rods [4].

(b) Remove the rods [4] from the fuse pins [6].

(c) Remove the nuts [9] and the special washers [7] from the fuse pins [6].

(d) Use puller, SPL-1868, to remove the fuse pins [6] that hold the housing assembly [8] to the forward trunnion support.

(e) Remove the forward trunnion bearing assembly [1] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Forward Trunnion Bearing Assembly Installation
Figure 401/32-11-83-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Forward Trunnion Bearing Assembly Installation
Figure 401/32-11-83-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-83-400-801

3. Main Landing Gear Forward Trunnion Bearing Assembly Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
12-21-11-640-801	Main Landing Gear Upper End Components Servicing (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-00-400-801	Main Landing Gear Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
A50009	Sealant - Low Density, Non-Chromate Type. (Formerly Chromate - Synthetic Rubber)	BMS5-142 Type II Class B-1 or B-2
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
D00006	Compound - Antiseize, Pure Nickel Special - Never-Seez NSBT-8N/-16N	
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	Special washer	32-11-00-04-040	LOM ALL
8	Housing assembly	32-11-00-04-095	LOM ALL

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
551	Left Wing - Rear Spar To Landing Gear Support Beam
651	Right Wing - Rear Spar to Landing Gear Support Beam
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Installation

SUBTASK 32-11-83-480-002

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Main Landing Gear Forward Trunnion Bearing Assembly Installation

SUBTASK 32-11-83-420-001

(1) Install the forward trunnion bearing assembly [1]:

(a) Apply a thin layer of corrosion inhibiting material, G50136, to the fuse pins [6] as follows:

1) The outer diameters.

2) The threads.

3) The head mating surfaces.

(b) Apply two layers of primer, C00259, to the special washers [7].

(c) Put the housing assembly [8] in its position for the connection to the forward trunnion support.

NOTE: The zerk fitting on the housing assembly [8] will point up and aft.

(d) Align the holes in the housing assembly [8] to the holes in the forward trunnion support.

(e) Install the special washers [7] as follows:

1) Clean any corrosion inhibiting material, G50136, from surfaces where sealant, A00247, or sealant, A50009, is applied.

NOTE: Cross contamination is not permitted.

CAUTION DO NOT APPLY SEALANT TO WASHER SURFACES THAT TOUCH WITH THE PIN HEADS OR NUTS. THIS CAN CAUSE DAMAGE TO THE EQUIPMENT.

2) Apply sealant as follows:

a) If plain special washers [7] are installed, apply sealant, A00247, or sealant, A50009, to one side of the special washer [7] that will be mating to the forward trunnion support.

b) If countersunk special washers [7] are installed, apply sealant, A00247, or sealant, A50009, to the non-countersunk side.

<1> For each countersunk special washer [7], turn the non-countersunk side against the forward trunnion support.

3) Install the special washers [7] on the forward trunnion support.

4) Visually align the special washers [7] with the forward trunnion support bore.

NOTE: Washers are to stay aligned with the fuse pins during installation of the fuse pins.

(f) Apply a thin layer of corrosion inhibiting material, G50136, to the mating surfaces of the special washers [7] to the fuse pin bolt heads or nuts [9].

(g) Put the fuse pins [6] through the special washers [7], forward trunnion support, and housing assembly [8].

(h) Use a clean cloth to clean unwanted corrosion inhibiting material, G50136, from the threads of the fuse pins [6].

I (i) Apply Pure Nickel Special compound, D00006, to the inner surfaces of nuts [9] and to the threads of the fuse pins [6].

(j) Install the nuts [9] on the fuse pins [6].

(k) Check that the run-up torque on the nuts [9] is 117 in-lb (13.2 N·m) or greater.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) If the run-up torque is less than 117 in-lb (13.2 N·m), replace the nuts [9].

(l) Tighten the nuts [9] to 1300 in-lb (146.9 N·m) - 1350 in-lb (152.5 N·m).

1) Make sure that the special washers [7] stay aligned with the support bore when you tighten each nut [9].

2) Do a visual inspection that the special washers [7] are centered.

3) Re-tighten the nuts [9] to 1300 in-lb (146.9 N·m) - 1350 in-lb (152.5 N·m).

NOTE: Re-tighten the nuts before the squeeze-out life of the sealant.

NOTE: Wait a minimum 10 minutes for sealant with a squeeze out life less than or equal to 48 hours.

Wait a minimum 60 minutes for sealant with a squeeze out life greater than 48 hours.

(m) Use a clean cloth to clean unwanted corrosion inhibiting material, G50136, at the outer edges of the special washers [7].

(n) Clean any corrosion inhibiting material, G50136, from surfaces where sealant, A00247, or sealant, A50009, is applied.

NOTE: Cross contamination is not permitted.

(o) Apply a fillet seal to the edge of the special washers [7] with sealant, A00247, or sealant, A50009.

(p) Put the rods [4] into the fuse pins [6].

(q) Install the fuse pin caps [3], washers [5], and nuts [2] on the ends of the rods [4].

(r) Tighten the nuts [2] to 50 in-lb (5.6 N·m) - 80 in-lb (9.0 N·m).

SUBTASK 32-11-83-420-003

(2) Install the clamp [10], screws [11], and washers [12] on the hydraulic flow regulator.

SUBTASK 32-11-83-420-004

(3) Install the clamp block assemblies [17].

(a) Install the clamp blocks [22] and channels [21] to the tubing.

(b) Install the spacers [20], washers [19] and screws [18] to the clamp block assemblies [17] and nutplates [23] to secure to the structure.

SUBTASK 32-11-83-420-005

(4) Install the fairlead [13] and fairlead [24] to the brackets..

(a) Install the fairlead [13] to the bracket with bolts [14], washers [15] and nuts [16].

(b) Tighten the bolts [14] 20 in-lb (2.3 N·m) - 25 in-lb (2.8 N·m).

(c) Install the fairlead [24] to the bracket with the bolts [25], washers [26] and nuts [27].

(d) Tighten the bolts [25] 20 in-lb (2.3 N·m) - 25 in-lb (2.8 N·m).

(e) Visually inspect the cables at the fairlead [13] and fairlead [24] upon reinstallation to the brackets for any damage.

SUBTASK 32-11-83-420-002

(5) Do this task: Main Landing Gear Installation, TASK 32-11-00-400-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-83-610-001

(1) Lubricate the housing assembly [8], do this task: Main Landing Gear Upper End Components Servicing, TASK 12-21-11-640-801.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR AXLE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the axle (referred to as the axle assembly [1]) for the main landing gear

(2) An installation of the axle for the main landing gear.

(3) A removal of the axle sleeve for the main landing gear

(4) An installation of the axle sleeve for the main landing gear.

(5) A removal of the brake sleeve for the main landing gear

(6) An installation of the brake sleeve for the main landing gear.

TASK 32-11-85-000-801

2. Main Landing Gear Axle Removal

NOTE: See Figure 401.

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)
32-42-11-000-801	Transducer Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1864	Puller Equipment - Axle Sleeve Assembly, MLG Part #: C32032-125 Supplier: 81205 Opt Part #: C32032-98 Supplier: 81205

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-85-480-001

WARNING MAKE SURE THAT THE GROUND LOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE GROUND LOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-85-580-001

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Main Landing Gear Axle Removal

SUBTASK 32-11-85-020-001

(1) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

NOTE: This procedure will also remove the wheel and tire assemblies.

SUBTASK 32-11-85-020-002

(2) Remove the in-axle assemblies. To remove them, do this task: Transducer Removal, TASK 32-42-11-000-801.

NOTE: Make sure you attach a label to the wires to indicate the left and right connectors.

SUBTASK 32-11-85-020-003

(3) Do these steps to remove the wiring assembly [39] from the axle assembly [1]:

(a) Remove the lockwires from the fitting [4] and conduit nut [5].

1) Discard the lockwires.

(b) Loosen the conduit nut [5] to disconnect the conduit assembly [40] from the inner cylinder assembly [3].

(c) Loosen the fitting [4].

(d) Pull the wiring assembly [39] completely out of the axle assembly [1].

1) Make sure that the label is attached to the wires to indicate the left and right connectors.

SUBTASK 32-11-85-020-004

CAUTION

DO NOT APPLY TOO MUCH FORCE WHEN YOU REMOVE THE BRAKE SLEEVE. IF YOU USE TOO MUCH FORCE, DAMAGE TO THE AIRPLANE AND THE SUPPORT EQUIPMENT CAN OCCUR.

(4) Use the puller equipment, SPL-1864 to remove the brake sleeve [2] from the axle assembly [1].

NOTE: Applied heat can decrease the force necessary for the removal.

SUBTASK 32-11-85-020-007

(5) Do these steps to remove the bracket [10]:

(a) Remove the cotter pin [9] from the pin [6].

(b) Remove the nut [8] and washer [7] from the pin [6].

(c) Remove the nuts [11] and washers [12] that hold the bracket [10] to the mounting studs.

(d) Slowly lower the bracket [10] to the ground.

SUBTASK 32-11-85-020-008

(6) Do these steps to remove the lower torsion link pin [16].

NOTE: It is necessary to remove the lower torsion link pin to get access to the pin that holds the axle to the inner cylinder assembly.

(a) Disconnect the lower torsion link [18] from the inner cylinder assembly [3] as follows:

1) Remove pin [13], nut [14] and washer [15] from the cross bolt [17].

2) Remove the cross bolt [17] that holds the lower torsion link pin [16] to the spacer [19].

3) Hold the lower torsion link [18] and remove the lower torsion link pin [16] to disconnect the lower torsion link [18] from the inner cylinder assembly [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

4) Remove the spacer [19] from the lower torsion link [18].

SUBTASK 32-11-85-020-005

(7) Do these steps to remove the axle assembly [1]:

(a) Remove the pin [6] that holds the axle assembly [1] to the inner cylinder assembly [3].

(b) Remove the axle assembly [1] from the airplane.

NOTE: If the removal of the axle assembly [1] is difficult, applied heat may be required. Use puller assembly, puller equipment, SPL-1864.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Axle Installation
Figure 401/32-11-85-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Axle Installation
Figure 401/32-11-85-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Axle Installation
Figure 401/32-11-85-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Axle Installation
Figure 401/32-11-85-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Axle Installation
Figure 401/32-11-85-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-85-420-801

3. Main Landing Gear Axle Installation

NOTE: See Figure 401.

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-21-11-640-802	Main Landing Gear Lower End Components Servicing (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)
32-42-00-710-802	Transducer Operational Test (P/B 501)
32-42-11-400-801	Transducer Installation (P/B 401)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Consumable Materials

Reference	Description	Specification
B00130	Alcohol - Isopropyl	TT-I-735
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33
D50004	Compound - Antiseize	BMS3-28
G02166	Lockwire - MS20995NC20, Monel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38
G51677	Cloth - 100% Synthetic or Blended Synthetic, Cotton or Cellulose Material	AMS3819 Class 1, 2, or 4, Grade A or B, Form 1

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Axle assembly	32-11-85-01A-025	LOM ALL
2	Brake sleeve	32-11-85-01A-050	LOM ALL

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Installation

SUBTASK 32-11-85-480-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

F. Main Landing Gear Axle Installation

SUBTASK 32-11-85-420-006

(1) Lightly lubricate the bushing bores of the inner cylinder assembly [3] with grease, D00633.

NOTE: Use grease, D00013 if grease, D00633 is not available.

SUBTASK 32-11-85-420-007

(2) Put the axle assembly [1] through the inner cylinder assembly [3].

SUBTASK 32-11-85-420-008

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(3) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) corrosion inhibiting material, G50136 (alternate) or to these items:

NOTE: Do not apply corrosion preventive compound to the chrome plated surfaces of the pin [6].

(a) The head face of the pin [6]

(b) The threads and thread reliefs of the pin [6]

(c) The threads of the nut [8]

(d) The faces of the washer [7]

SUBTASK 32-11-85-020-009

(4) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

SUBTASK 32-11-85-420-009

(5) Lubricate the chrome plated surfaces of pin [6] with grease, D00633.

NOTE: Use grease, D00013 if grease, D00633 is not available.

SUBTASK 32-11-85-420-010

(6) Align the hole on the axle assembly [1] with the holes on the inner cylinder assembly [3] for the installation of the pin [6].

SUBTASK 32-11-85-420-011

(7) Put the pin [6] through the inner cylinder assembly [3] and the axle assembly [1].

SUBTASK 32-11-85-420-012

(8) Do these steps to install the lower torsion link pin [16].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) corrosion inhibiting material, G50136 (alternate) to these items:

1) The threads of nut [14].

2) The face of washer [15].

(b) Remove any excess Cor-Ban 27L Compound, G50237.

(c) Lubricate the chrome plated surfaces of the lower torsion link pin [16] and cross bolt [17] with grease, D00633.

(d) Remove all unwanted grease, D00633.

(e) Connect the lower torsion link [18] to the inner cylinder assembly [3]:

1) Put the lower torsion link [18] in its position on the inner cylinder assembly [3].

2) Put the lower torsion link pin [16] through the clevis on the inner cylinder assembly [3] and the spacer [19].

3) Align the hole in the lower torsion link pin [16] with hole in the spacer [19] for the installation of the cross bolt [17].

4) Put the cross bolt [17] through the spacer [19] and the lower torsion link pin [16].

5) Install the washer [15] and the nut [14] on the cross bolt [17].

6) Tighten the nut [14] to 160 in-lb (18 N·m) to 190 in-lb (21 N·m).

7) Install the pin [13] in the cross bolt [17]. If it is necessary, loosen the nut [14] to the nearest castellation to align the hole for the pin [13].

SUBTASK 32-11-85-420-013

(9) Put the bracket [10] in its position on the pin [6] for attachment to the mounting studs.

SUBTASK 32-11-85-420-014

(10) Install the washers [12] and the nuts [11] that hold the bracket [10] to the mounting studs. Tighten the nuts [11] with your hand.

SUBTASK 32-11-85-420-015

(11) Install the washer [7] and nut [8] on the pin [6].

NOTE: It is permitted to install additional washers if adjustment is necessary.

SUBTASK 32-11-85-420-016

(12) Tighten the nut [8] to 160 in-lb (18 N·m) – 190 in-lb (21 N·m). If it is necessary, loosen the nut [8] to the nearest castellation to align the holes for the cotter pin [9].

SUBTASK 32-11-85-420-017

(13) Install the cotter pin [9] in the pin [6].

SUBTASK 32-11-85-640-001

(14) Do these steps to install the brake sleeve [2]:

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(a) Apply a light coating of grease, D00633 to the lands of the axle assembly [1] and the axle assembly axle sleeve, where the brake sleeve [2] inside diameters set.

NOTE: Avoid use of too much grease on the brake sleeve [2].

NOTE: Use grease, D00013 if grease, D00633 is not available.

(b) Heat the brake sleeve [2] to 375 degrees +/- 25 degrees Fahrenheit.

(c) Install the brake sleeve [2] on the axle assembly [1].

(d) Remove all unwanted grease, D00633 or grease, D00013.

SUBTASK 32-11-85-420-003

(15) Do these steps to install the wiring assembly [39] in the axle assembly [1]:

NOTE: Make sure you connect the correct wires to the correct in-axle assembly.

(a) Before you connect the electrical connector to the inner cylinder assembly [3], examine the connector for corrosion.

WARNING	DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(b) If there was corrosion, refer to (SWPM 20-60-03) to correct the problem.

(c) Apply the D5026NS or ZC-026 compound, G50171 to the connector (SWPM 20-60-03).

(d) Push the wiring through the hole on the inner cylinder assembly [3] and into the axle assembly [1].

(e) Clean the mating surfaces of the fitting [4] and conduit nut [5] with alcohol, B00130, and cloth, G51677.

(f) Apply compound, D50004 (preferred), or Cor-Ban 27L Compound, G50237 (alternative), to the threads of the fitting [4] and conduit nut [5].

(g) Tighten the fitting [4] to 45 in-lb (5.1 N·m) - 55 in-lb (6.2 N·m).

(h) Tighten the conduit nut [5] to 70 in-lb (7.9 N·m) - 90 in-lb (10.2 N·m) to connect the conduit assembly [40] to the inner cylinder assembly [3].

(i) Install MS20995NC20 lockwire, G02166, on the fitting [4] and conduit nut [5].

SUBTASK 32-11-85-420-004

(16) Install the in-axle assemblies. To install them, do this task: Transducer Installation, TASK 32-42-11-400-801.

SUBTASK 32-11-85-420-005

(17) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: This procedure will also install the wheel and tire assemblies.

(a) Make sure that the correct wires are connected to the correct in-axle assembly.

SUBTASK 32-11-85-600-001

(18) For the grease fittings on the upper torsion link and the lower torsion link [18], do this task: Main Landing Gear Lower End Components Servicing, TASK 12-21-11-640-802.

SUBTASK 32-11-85-710-001

(19) Do a test of the transducer: Transducer Operational Test, TASK 32-42-00-710-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-85-580-002

(1) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

——— END OF TASK ———

TASK 32-11-85-000-802

4. Main Landing Gear Axle Sleeve Removal

(Figure 401)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)
32-42-11-000-801	Transducer Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1864	Puller Equipment - Axle Sleeve Assembly, MLG Part #: C32032-125 Supplier: 81205 Opt Part #: C32032-98 Supplier: 81205

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-85-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-85-580-003

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

E. Main Landing Gear Axle Sleeve Removal

SUBTASK 32-11-85-020-010

(1) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

NOTE: This procedure will also remove the wheel and tire assemblies.

SUBTASK 32-11-85-020-011

(2) Remove the in-axle assemblies (TASK 32-42-11-000-801).

(a) Make sure that the label is attached to the wires to indicate the left and right connectors.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-85-020-012

(3) Do these steps to remove the wiring assembly [39] from the axle assembly [1]:

(a) Remove the lockwires from the fitting [4] and conduit nut [5].

1) Discard the lockwires.

(b) Loosen the conduit nut [5] to disconnect the conduit assembly [40] from the inner cylinder assembly [3].

(c) Loosen the fitting [4].

(d) Pull the wiring assembly [39] completely out of the axle assembly [1].

1) Make sure that the label is attached to the wires to indicate the left and right connectors.

SUBTASK 32-11-85-020-022

CAUTION DO NOT APPLY TOO MUCH FORCE WHEN YOU REMOVE THE BRAKE SLEEVE. IF YOU USE TOO MUCH FORCE, DAMAGE TO THE AIRPLANE AND THE SUPPORT EQUIPMENT CAN OCCUR.

(4) Remove the brake sleeve [2] from the axle assembly [1].

NOTE: Applied heat can decrease the force necessary for the removal.

(a) Use the puller equipment, SPL-1864.

SUBTASK 32-11-85-020-013

(5) Do these steps to remove the axle sleeve [37] from the axle assembly [1]:

(a) Remove the axle sleeve retention pin [38].

(b) To push the retention pin out of the axle assembly [1], use the puller equipment, SPL-1864, RC-50 Assy.

(c) Remove the axle sleeve [37].

NOTE: Applied heat may be required for removal.

1) Use the puller equipment, SPL-1864.

END OF TASK

TASK 32-11-85-420-802

5. Main Landing Gear Axle Sleeve Installation

(Figure 401)

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-21-11-640-802	Main Landing Gear Lower End Components Servicing (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)
32-42-11-400-801	Transducer Installation (P/B 401)
SWPM 20-60-03	Special Protection of Electrical Connectors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00130	Alcohol - Isopropyl	TT-I-735
D00633	Grease - Aircraft General Purpose	BMS3-33
D50004	Compound - Antiseize	BMS3-28
G02166	Lockwire - MS20995NC20, Monel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38
G51677	Cloth - 100% Synthetic or Blended Synthetic, Cotton or Cellulose Material	AMS3819 Class 1, 2, or 4, Grade A or B, Form 1

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Axle assembly	32-11-85-01A-025	LOM ALL
2	Brake sleeve	32-11-85-01A-050	LOM ALL

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Installation

SUBTASK 32-11-85-480-004

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

F. Main Landing Gear Axle Sleeve Installation

SUBTASK 32-11-85-420-018

(1) Do the following steps to install the axle sleeve [37]:

(a) Apply a generous coating of grease, D00633, to the lands of the axle assembly [1], where the axle sleeve [37] inside diameters set.

(b) Heat the axle sleeve [37] to 375 ±25°F (191 ±14°C).

(c) Align the retention pin holes in the axle sleeve [37] and the axle assembly [1] before installing the sleeve on the axle assembly [1].

NOTE: The axle sleeve will rapidly shrink to normal size and seize the axle, preventing further pin alignment efforts.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-85-420-019

(2) Do the following steps to install the axle sleeve retention pin [38]:

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the retention pin hole in the axle assembly [1], and the hole in the axle sleeve [37].

1) If corrosion inhibiting compound is not available, use sealant, A00247, as an approved alternate.

(b) Install the axle sleeve retention pin [38] by lightly pressing or tapping the pin into place. The head of the pin must be flush or below the outside diameter of the axle sleeve [37].

SUBTASK 32-11-85-020-014

(3) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

SUBTASK 32-11-85-420-026

(4) Do these steps to install the brake sleeve [2]:

(a) Apply a light coating of grease, D00633, to the lands of the axle assembly [1] and the axle assembly sleeve, where the brake sleeve [2] inside diameters set.

NOTE: Avoid use of too much grease on the brake sleeve [2].

(b) Heat the brake sleeve [2] to 375 ±25°F (191 ±14°C).

(c) Install the brake sleeve [2] on the axle assembly [1].

(d) Remove all unwanted grease, D00633.

SUBTASK 32-11-85-420-020

(5) Do these steps to install the wiring assembly [39] in the axle assembly [1]:

(a) Before you connect the electrical connector to the inner cylinder assembly [3], examine the connector for corrosion.

> **WARNING**
> DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(b) If there was corrosion, refer to SWPM 20-60-03 to correct the problem.

(c) Apply D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

(d) Push the wiring through the hole on the inner cylinder assembly [3] and into the axle assembly [1].

(e) Clean the mating surfaces of the fitting [4] and conduit nut [5] with alcohol, B00130, and cloth, G51677.

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(f) Apply compound, D50004 (preferred), or Cor-Ban 27L Compound, G50237 (alternative), to the threads of the fitting [4] and conduit nut [5].

(g) Tighten the fitting [4] to 45 in-lb (5.1 N·m) - 55 in-lb (6.2 N·m).

(h) Tighten the conduit nut [5] to 70 in-lb (8 N·m) - 90 in-lb (10 N·m) to connect the conduit assembly [40] to the inner cylinder assembly [3].

(i) Install MS20995NC20 lockwire, G02166, on the fitting [4] and conduit nut [5].

SUBTASK 32-11-85-420-021

(6) Install the in-axle assemblies (TASK 32-42-11-400-801).

SUBTASK 32-11-85-420-022

(7) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: This procedure will also install the wheel and tire assemblies.

(a) Make sure that the correct wires are connected to the correct in-axle assembly.

SUBTASK 32-11-85-600-002

(8) For the grease fittings on the upper torsion link and the lower torsion link [18], do this task: Main Landing Gear Lower End Components Servicing, TASK 12-21-11-640-802.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-85-580-004

(1) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

TASK 32-11-85-000-803

6. Main Landing Gear Brake Sleeve Removal

(Figure 401)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1864	Puller Equipment - Axle Sleeve Assembly, MLG Part #: C32032-125 Supplier: 81205 Opt Part #: C32032-98 Supplier: 81205

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-85-580-006

(1) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

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E. Main Landing Gear Brake Sleeve Removal

SUBTASK 32-11-85-020-020

(1) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

NOTE: This procedure will also remove the wheel and tire assemblies.

SUBTASK 32-11-85-020-021

> **CAUTION** DO NOT APPLY TOO MUCH FORCE WHEN YOU REMOVE THE BRAKE SLEEVE. IF YOU USE TOO MUCH FORCE, DAMAGE TO THE AIRPLANE AND THE SUPPORT EQUIPMENT CAN OCCUR.

(2) Do these steps to remove the brake sleeve [2] from the axle assembly [1]:

(a) Remove the brake sleeve [2]. Use the puller equipment, SPL-1864.

NOTE: Applied heat can decrease the force necessary for the removal.

——— END OF TASK ———

TASK 32-11-85-420-803

7. Main Landing Gear Brake Sleeve Installation

(Figure 401)

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Installation

SUBTASK 32-11-85-490-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Main Landing Gear Brake Sleeve Installation

SUBTASK 32-11-85-410-001

(1) Do the steps that follow to install the brake sleeve [2]:

(a) Apply a thin layer of grease, D00633 to the lands of the axle assembly [1] and axle sleeve retention pin [38], where the brake sleeve [2] inside diameters set.

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(b) Heat the brake sleeve [2] to 375 ±25°F (190.6 ±13.9°C).

(c) Install the brake sleeve [2] on the axle assembly [1] and the axle sleeve retention pin [38].

NOTE: The brake sleeve will rapidly shrink to normal size and seize the axle, preventing further movement.

SUBTASK 32-11-85-410-002

(2) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: This procedure will also install the wheel and tire assemblies.

NOTE: Make sure you connect the correct wires to the correct in-axle assembly.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-85-860-001

(1) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR AXLE - REPAIRS

1. General

A. This procedure contains these tasks:

(1) Repair of the Main landing Gear Axle

(2) Repair of the Axle Sleeves of the Main Landing Gear

B. You can remove the cadmium plating to inspect the base metal for heat damage on airplanes on which heavy braking gives sufficient heat to melt the cadium plating on the axle.

C. The repairs to the axle sleeves will be the blending out of scratches, scoring, and galling in the limits given below.

TASK 32-11-85-300-801

2. Main Landing Gear Axle Repair

(Figure 801, Figure 802)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-11-85-000-802	Main Landing Gear Axle Sleeve Removal (P/B 401)
32-11-85-420-801	Main Landing Gear Axle Installation (P/B 401)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1864	Puller Equipment - Axle Sleeve Assembly, MLG Part #: C32032-125 Supplier: 81205 Opt Part #: C32032-98 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
B00102	Abrasive - Aluminum Oxide Coated Cloth	
B00137	Abrasive - Garnet Coated Paper	
B00138	Abrasive - Silicon Carbide Coated Cloth	
C00250	Coating - Aluminum, Corrosion and Heat Resistant ,Thermosetting, Inorganic Binder	AMS3126 (Supersedes BMS14-4 Type I)
C00251	Coating - Inorganic, Heat, Weather And Oil Resistant Protective Coating (Room Temperature Catalytic Cure)	BMS14-4 Type II
D00633	Grease - Aircraft General Purpose	BMS3-33

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

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E. Prepare for the Repair

SUBTASK 32-11-85-480-005

> **WARNING** OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

F. Main Landing Gear Axle Repair

SUBTASK 32-11-85-020-015

(1) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

NOTE: This procedure will also remove the wheel and tire assemblies.

SUBTASK 32-11-85-300-001

(2) Remove lockbolt and nut.

SUBTASK 32-11-85-300-002

> **CAUTION** DO NOT APPLY TOO MUCH FORCE WHEN YOU REMOVE THE BRAKE SLEEVE. IF YOU USE TOO MUCH FORCE, DAMAGE TO THE AIRPLANE AND THE SUPPORT EQUIPMENT CAN OCCUR.

(3) Remove the sleeve from the axle with an approved puller puller equipment, SPL-1864 (Main Landing Gear Axle Sleeve Removal, TASK 32-11-85-000-802).

(a) If it is necessary, you can increase the temperature of the sleeve to approximately 200 degrees F.

NOTE: Applied heat can decrease the force necessary for the removal.

SUBTASK 32-11-85-300-003

(4) Use an abrasive, B00137 or abrasive cloth, B00102 or abrasive, B00138 and remove the plating by hand.

NOTE: Do not use power tools. The maximum mismatch is 0.003 inch.

SUBTASK 32-11-85-300-004

(5) Make sure you do not remove more than 0.003 in. (0.076 mm) of base metal.

(6) If you find any cracks, continue to remove the plating and the base metal until the cracks will be smooth.

SUBTASK 32-11-85-300-005

(7) Apply an coating, C00250 or coating, C00251 (Ref. Chapter 51, Heat, Weather, and Oil Resistant Inorganic Protective Coating).

SUBTASK 32-11-85-300-006

(8) Apply a thick layer of grease, D00633 to the axle lands.

NOTE: Do not remove too much grease, D00633 from the inside diameter of the axle sleeve after installation.

SUBTASK 32-11-85-420-024

(9) Do this, do this task: Main Landing Gear Axle Installation, TASK 32-11-85-420-801.

SUBTASK 32-11-85-300-007

(10) Align the bolt holes in the axle and the sleeve.

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(a) Install the lockbolt.

SUBTASK 32-11-85-300-008

(11) Verify the diameter of the bearing supports after the sleeve installation.

NOTE: The outer diameter of the small bearing support must not be more than 4.3293 inches. The outer diameter of large bearing support must not be more than 4.7491 inches.

——— END OF TASK ———

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Axle Sleeve Installation
Figure 801/32-11-85-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THE DIMENSIONS OF THE AXLE SLEEVES YOU WILL INSTALL WILL BE DIFFERENT THAN THE AXLE SLEEVES YOU WILL REMOVE BECAUSE OF THE INTERFERENCE FIT.

L34662 S0006574899_V4

Permitted Wear Limits of Installed Axle Sleeves
Figure 802/32-11-85-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-85-300-802

3. Repair of the Axle Sleeve of the Main Landing Gear

(Figure 801, Figure 802)

A. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

B. Axle Sleeve of the Main Landing Gear Repair

SUBTASK 32-11-85-300-009

(1) Do a check on the wear limits of the bearing boss.

(a) Examine the diameters of the inboard and outboard bearing boss for worn areas as shown on Figure 802.

1) If worn areas on the bearing boss is more than the specified wear limits and the clearance between the bearing and boss is more than 0.006 in. (0.152 mm), remove the axle sleeve and replace or rework.

2) If worn areas on the bearing boss is more than the specified wear limits and the clearance between the bearing and boss is not more than 0.006 in. (0.152 mm), the axle sleeve can continue to be in service for 65 hours flying time before removal for replacement or repairs.

SUBTASK 32-11-85-300-010

(2) Repair the local damage on the bearing surfaces.

(a) Remove the sharp edges and make a smooth finish on the damage to a 0.50 in. (12.70 mm) radius.

1) Do not reduce the wall thickness by more than 0.025 in. (0.635 mm) or more than 30 % of each of the total bearing area of any 90 degree segment.

NOTE: The outboard bearing area can be counted separately from the inboard bearing area.

(b) If damage is on the antirotation bolt hole, replace the sleeve or contact BOEING to make an analysis of a possible repair.

END OF TASK

TASK 32-11-85-300-803

4. Repair of the Brake Sleeve of the Main Landing Gear

(Figure 803, Figure 804)

A. References

Reference	Title
32-11-85-000-803	Main Landing Gear Brake Sleeve Removal (P/B 401)
32-11-85-420-803	Main Landing Gear Brake Sleeve Installation (P/B 401)

B. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

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C. Procedure to Repair the Brake Sleeve of the Main Landing Gear.

SUBTASK 32-11-85-220-001

(1) Do a check of the wear limits of the sleeve.

(a) Measure the sleeve diameter in the worn and unworn areas of the sleeve.

1) Make sure that the difference in the sleeve diameter is not more than 0.003 inches.

2) Make sure that the base metal is not exposed.

SUBTASK 32-11-85-020-023

(2) Replace the brake sleeve if the worn areas are more than the specified limit.

(a) Do the replacement of the brake sleeve in less than 65 hours of flight time.

(b) These are the tasks:

- Main Landing Gear Brake Sleeve Removal, TASK 32-11-85-000-803
- Main Landing Gear Brake Sleeve Installation, TASK 32-11-85-420-803

END OF TASK

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Brake Sleeve Installation
Figure 803/32-11-85-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THE DIMENSIONS OF THE BRAKE SLEEVE YOU WILL INSTALL WILL BE DIFFERENT THAN THE BRAKE SLEEVE YOU WILL REMOVE BECAUSE OF THE INTERFERENCE FIT.

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Permitted Wear Limits of Installed Brake Sleeve
Figure 804/32-11-85-990-806

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR DOWNLOCK STRUT - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) A removal of the main landing gear downlock strut

(2) An installation of the main landing gear downlock strut.

C. The assembly of the lock link assembly and link arm assembly are referred to as the "downlock strut" in this procedure.

TASK 32-11-89-000-801

2. Main Landing Gear Downlock Strut Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-91-000-801	Main Gear Downlock Springs Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1361	Wrench Adapter, C32029-39 or C32029-95 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1369	Thread Protector , C32029-13 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1370	Thread Protector, C32029-14 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-12498	Release Lever - Downlock, MLG downlock Part #: C32052-1 Supplier: 81205
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left

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(Continued)

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-11-89-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-11-89-860-001

(2) Lift the airplane on jacks until the main landing gear wheels are off of the ground (TASK 07-11-01-580-815).

SUBTASK 32-11-89-860-002

(3) Remove the power from hydraulic system A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-11-89-020-001

(4) Do this task: Main Gear Downlock Springs Removal, TASK 32-32-91-000-801.

E. Main Landing Gear Downlock Strut Removal

SUBTASK 32-11-89-020-002

(1) Do these steps to disconnect the hydraulic lines [2] from the downlock actuator [4]:

(a) Put tags on the hydraulic lines [2] to prevent the crossing of the hydraulic lines [2] during the installation.

(b) Disconnect the hydraulic lines [2] from the downlock actuator [4].

(c) Install the cap/plug, STD-14686, on the hydraulic lines [2].

(d) Remove and discard the packings [3].

(e) Install the cap/plug, STD-14686, in the ports of the downlock actuator [4].

SUBTASK 32-11-89-020-008

I (2) Use a downlock release lever, SPL-12498, to manually release the Main Landing Gear (MLG) downlock mechanism.

SUBTASK 32-11-89-020-003

(3) Do these steps to disconnect the rod end of the downlock actuator [4] from the downlock strut [5]:

(a) Remove the spacer [7] from the rod end pin [8].

(b) From the forward side, remove the rod end pin [8] that holds the rod end of the downlock actuator [4] to the downlock strut [5].

(c) Remove the spacers [9] and washers [10].

(d) Slowly lower the rod end of the downlock actuator [4] to the upper end of the upper side strut.

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(e) Use a tape to attach the rod end of the downlock actuator [4] to the upper end of the upper side strut.

NOTE: This will prevent the downlock actuator from moving when you do the subsequent steps.

SUBTASK 32-11-89-020-004

(4) Do these steps to disconnect the electrical harnesses [11] from the downlock strut [5]:

(a) Remove the nuts [20], washers [19], and bolts [18] to disconnect the brackets [17] from the downlock strut [5].

1) Remove the brackets [17] with the sensors attached.

(b) Isolate the brackets [17] from the downlock strut [5].

SUBTASK 32-11-89-080-001

(5) Remove the downlock pin from the MLG in order to remove the downlock strut [5] (TASK 32-00-01-080-801).

SUBTASK 32-11-89-020-005

(6) Do these steps to disconnect the downlock strut [5] from the reaction link assembly [6]:

(a) Remove the pin [22] from the downlock link pin [12].

(b) Remove the nut [21] and washer [23] from the downlock link pin [12].

1) Use a wrench adapter, C32029-39 or C32029-95, SPL-1361, to hold the head of the downlock link pin [12] when you loosen the nut [21].

(c) Remove the downlock link pin [12] that holds the downlock strut [5] to the reaction link assembly [6].

1) Use a thread protector, C32029-14, SPL-1370.

SUBTASK 32-11-89-020-006

(7) Do these steps to disconnect the downlock strut [5] from the upper side strut:

(a) Remove the pin [16] from the downlock link pin [13].

(b) Remove the nut [15] and washer [14] from the downlock link pin [13].

(c) Remove the downlock link pin [13] that holds the downlock strut [5] to the upper side strut.

1) Use a thread protector, C32029-13, SPL-1369.

SUBTASK 32-11-89-020-007

(8) Remove the downlock strut [5] from the airplane.

SUBTASK 32-11-89-580-001

(9) If the removal of the downlock strut [5] is difficult do this task to decrease the weight on the gear: Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS OPPOSITE)

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Main Landing Downlock Strut Installation
Figure 401/32-11-89-990-801 (Sheet 1 of 3)

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Main Landing Downlock Strut Installation
Figure 401/32-11-89-990-801 (Sheet 2 of 3)

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Main Landing Downlock Strut Installation
Figure 401/32-11-89-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-11-89-420-801

3. Main Landing Gear Downlock Strut Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-21-11-640-801	Main Landing Gear Upper End Components Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-51-400-801	Main Gear Downlock Actuator Installation (P/B 401)
32-32-91-400-801	Main Gear Downlock Spring Installation (P/B 401)
32-61-31-220-801	Main Landing Gear Down-and-Locked Sensor Clearance Measurement (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1361	Wrench Adapter, C32029-39 or C32029-95 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1369	Thread Protector , C32029-13 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205
SPL-1370	Thread Protector, C32029-14 (included in C32029 kit) Part #: C32029-87 Supplier: 81205 Opt Part #: C32029-38 Supplier: 81205 Opt Part #: C32029-45 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38
G50411	Torque Stripe - EC-1252 [pink or yellow (as required per BAC5001-10)]	BMS8-45 Type I

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D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Packing	32-32-51-01-024	LOM ALL
5	Downlock strut	32-11-61-01-187	LOM 402, 404, 406, 407, 412, 415, 416, 420, 423, 424, 426, 432, 437-439, 441, 443-447, 455, 456, 458-463
		32-11-61-01-195	LOM 402, 404, 406, 407, 412, 415, 416, 420, 423, 424, 426, 432, 437-439, 441, 443-447, 455, 456, 458-463
		32-11-61-01-200	LOM 402, 404, 406, 407, 412, 415, 416, 420, 423, 424, 426, 432, 437-439, 441, 443-447, 455, 456, 458-463
		32-11-61-01-555	LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999
16	Pin	32-11-61-01-175	LOM ALL
22	Pin	32-11-71-01-010	LOM ALL
		32-11-71-01-085	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Prepare for the Installation

SUBTASK 32-11-89-480-002

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

G. Main Landing Gear Downlock Strut Installation

SUBTASK 32-11-89-420-001

(1) Do these steps to connect the downlock strut [5] to the upper side strut:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION

MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

NOTE: Corrosion preventative compound must not be applied to the chrome plated surfaces.

1) The threads and thread reliefs of the downlock link pin [13]
2) The threads of the nut [15]
3) The faces of the washer [14].

(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(c) Lubricate the chrome plated surfaces of the downlock link pin [13] with grease, D00633.

(d) Put the downlock strut [5] in its position for attachment to the upper side strut.

(e) Put the downlock link pin [13] through the upper side strut and the downlock strut [5].

1) Use a thread protector, C32029-13, SPL-1369.

(f) Install the washer [14] and nut [15] on the downlock link pin [13].

(g) Tighten the nut [15] to 360 in-lb (40.7 N·m) – 600 in-lb (67.8 N·m).

(h) Install the pin [16] in the downlock link pin [13].

1) If it is necessary, loosen the nut [15] to the nearest castellation that aligns with the holes for the pin [16].

SUBTASK 32-11-89-420-002

(2) Do these steps to connect the downlock strut [5] to the reaction link assembly [6]:

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

NOTE: Corrosion preventative compound must not be applied to the chrome plated surfaces.

1) The threads and thread reliefs of the downlock link pin [12]
2) The threads of the nut [21]
3) The faces of the washer [23].

(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(c) Lubricate the chrome plated surfaces of the downlock link pin [12] with grease, D00633.

(d) Put the downlock strut [5] in its position for attachment to the reaction link assembly [6].

(e) Put the downlock link pin [12] through the downlock strut [5] and reaction link assembly [6].

1) Use a thread protector, C32029-14, SPL-1370.

(f) Install the washer [23] and nut [21] on the downlock link pin [12].

(g) Tighten the nut [21] to 360 in-lb (40.7 N·m) – 600 in-lb (67.8 N·m).

1) Use the wrench adapter, C32029-39 or C32029-95, SPL-1361, to hold the head of the downlock link pin [12] when you tighten the nut [21].

(h) Install the pin [22] in the downlock link pin [12].

1) If it is necessary, loosen the nut [21] to the nearest castellation that aligns with the holes for the pin [22].

SUBTASK 32-11-89-640-001

(3) Do these steps to connect the rod end of the downlock actuator [4] to the downlock strut [5]:

(a) Lubricate the inside surface of the rod end of the downlock actuator [4] and rod end pin [8] with grease, D00633.

1) Use grease, D00013, if grease, D00633, is not available.

(b) Put the rod end of the downlock actuator [4] in its position for attachment to the downlock strut [5].

1) If it is necessary, retract or extend the downlock actuator [4] to align the rod end of the downlock actuator [4] to the lug on the downlock strut [5].

(c) From the forward side, put the rod end pin [8] through the downlock strut [5], spacers [9], washers [10], and rod end of the downlock actuator [4].

(d) Install the spacer [7] on the rod end pin [8].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-11-89-420-003

> **CAUTION** USE TWO WRENCHES TO TORQUE THE HOSE B-NUT. USE ONE TO HOLD THE ELBOW FITTING, AND THE OTHER TO TORQUE THE HOSE B-NUT. IF YOU DO NOT OBEY, DAMAGE TO THE EQUIPMENT CAN OCCUR.

> **CAUTION** MAKE SURE THAT YOU DO NOT TWIST OR MAKE KINKS IN THE HOSE WHEN YOU TIGHTEN THE NUT. IF YOU DO NOT OBEY, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(4) Do these steps to connect the hydraulic lines [2] to the downlock actuator [4]:

(a) Remove the plugs from the ports on the downlock actuator [4].

(b) Lubricate the new packings [3] with hydraulic fluid, D00153, and install the new packings [3] in the ports of the downlock actuator [4].

(c) Remove the caps from the unions and connect the hydraulic lines [2] to the downlock actuator [4].

(d) Tighten B-nuts on the hydraulic lines [2] to 140 in-lb (15.8 N·m).

(e) Loosen the hydraulic lines [2].

(f) Tighten the B-nuts on the hydraulic lines [2] to 140 ±7 in-lb (15.8 ±0.8 N·m).

(g) Apply a torque stripe, G50411, to the B-nuts.

(h) Remove the tags from the hydraulic lines [2].

SUBTASK 32-11-89-420-005

(5) Do this step to connect the electrical harnesses [11] to the downlock strut [5]:

(a) Install the nuts [20], washers [19], and bolts [18] to connect the brackets [17] to the downlock strut [5].

SUBTASK 32-11-89-820-001

(6) Do this task: Main Landing Gear Down-and-Locked Sensor Clearance Measurement, TASK 32-61-31-220-801.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-11-89-420-004

(1) Do this task: Main Gear Downlock Spring Installation, TASK 32-32-91-400-801.

SUBTASK 32-11-89-610-001

(2) Lubricate the downlock strut [5], do this task: Main Landing Gear Upper End Components Servicing, TASK 12-21-11-640-801.

SUBTASK 32-11-89-860-003

(3) For the hydraulic systems A and B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-11-89-710-001

(4) Test the downlock actuator [4] (TASK 32-32-51-400-801).

SUBTASK 32-11-89-790-001

(5) Examine the connections of the hydraulic lines for leakage.

SUBTASK 32-11-89-080-002

(6) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL BLADE SEAL - REMOVAL/INSTALLATION

1. General

A. This has procedure has these tasks:

(1) A removal of the blade seal from the wheel well of the main landing gear

(2) An installation of the blade seal on the wheel well of the main landing gear.

B. The blade seal can be replaced in segments or all at one time.

TASK 32-12-12-000-801

2. Main Landing Gear Wheel Well Blade Seal Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Removal

SUBTASK 32-12-12-480-004

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-12-12-480-002

(2) Put chocks around the tires of all the landing gear (PAGEBLOCK 10-11-05/201).

D. Wheel Well Blade Seal Removal

SUBTASK 32-12-12-020-001

(1) Do these steps to remove all the blade seal [4] from the wheel well:

(a) Remove the screws [1] and washers [2] that hold the blade seal [4] between the upper seal retainer [3] and lower seal retainer [5].

(b) Isolate the upper seal retainer [3] from the blade seal [4] and lower seal retainer [5].

(c) Remove the blade seal [4] from the wheel well.

(d) Hold the lower seal retainer [5] in place with tape.

SUBTASK 32-12-12-020-003

(2) Do these steps to remove a segment or segments of blade seal [4] from the wheel well:

(a) Remove the screws [1] and washers [2] that hold the segment or segments of blade seal [4] between the upper seal retainer [3] and lower seal retainer [5].

(b) Loosen the adjacent screws to a segment or segments of blade seal [4] you will remove to help in the removal of blade seal [4].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Lift the upper seal retainer [3] lightly until you can remove a segment or segments of blade seal [4].

(d) Remove a segment or segments of a blade seal [4] from the wheel well.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

F69721 S0006574912_V2

Main Landing Gear Wheel Well Blade Seal Installation
Figure 401/32-12-12-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Wheel Well Blade Seal Installation
Figure 401/32-12-12-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F69868 S0006574914_V2

Main Landing Gear Wheel Well Blade Seal Installation
Figure 401/32-12-12-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-12-12-400-801

3. Main Landing Gear Wheel Well Blade Seal Installation

(Figure 401)

A. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Blade seal	53-14-00-05B-025	LOM ALL
		53-14-00-05B-030	LOM ALL
		53-14-00-05B-035	LOM ALL
		53-14-00-05B-050	LOM ALL
		53-14-00-05B-055	LOM ALL
		53-14-00-05B-060	LOM ALL
		53-14-00-05B-065	LOM ALL
		53-14-00-05B-080	LOM ALL
		53-14-00-05B-085	LOM ALL
		53-14-00-05B-095	LOM ALL
		53-14-00-05B-100	LOM ALL
		53-14-00-05B-115	LOM ALL
		53-14-00-05B-120	LOM ALL
		53-14-00-05B-135	LOM ALL
		53-14-00-05B-140	LOM ALL
		53-14-00-05B-145	LOM ALL

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Wheel Well Blade Seal Installation

SUBTASK 32-12-12-420-001

(1) Do these steps to install all the blade seal [4] on the wheel well:

(a) Remove the tape that hold the lower seal retainer [5] in place.

(b) Position the blade seal [4] and upper seal retainer [3] on the lower seal retainer [5].

1) Make sure that you install the blade seal [4] and upper seal retainer [3] on the same position from that they were removed.

NOTE: Each blade seal and seal retainer was designed to fit a specified area.

(c) Align the fastener holes on the blade seal [4] with the fastener holes on the upper seal retainer [3] and lower seal retainer [5].

(d) Install the screws [1] and washers [2] to hold the blade seal [4] between the upper seal retainer [3] and lower seal retainer [5].

(e) Tighten the screws [1] to 15 in-lb (1.7 N·m) max.

1) Make sure that there is a two thread minimum protrusion of the screw [1] through the nut plate element.

SUBTASK 32-12-12-420-002

(2) Do these steps to install a segment or segments of blade seal [4] on the wheel well:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Lift the upper seal retainer [3] lightly until you can install a segment or segments of a blade seal [4] between the upper seal retainer [3] and the lower seal retainer [5].

(b) Align the fastener holes on the blade seal [4] with the fastener holes on the upper seal retainer [3] and lower seal retainer [5].

(c) Install the screws [1] and washers [2] to hold the blade seal [4] between the upper seal retainer [3] and lower seal retainer [5].

(d) Tighten the screws [1] to 15 in-lb (1.7 N·m) max.

1) Make sure that there is a two thread minimum protrusion of the screw [1] through the nut plate element.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL BLADE SEAL - INSPECTION/CHECK

1. General

A. This procedure contains the task to examine the blade seal on the wheel well of the main landing gear.

TASK 32-12-12-200-801

2. Main Landing Gear Wheel Well Blade Seal Inspection

(Figure 601)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-12-12-000-801	Main Landing Gear Wheel Well Blade Seal Removal (P/B 401)
32-41-00 P/B 501	HYDRAULIC BRAKE SYSTEM - ADJUSTMENT/TEST
32-42-51 P/B 401	ANTISKID LANDING GEAR LEVER UP SWITCH - REMOVAL/INSTALLATION

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Inspection

SUBTASK 32-12-12-210-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-12-12-480-003

(2) Put chocks around the tires of all the landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Wheel Well Blade Seal Inspection

SUBTASK 32-12-12-020-002

(1) Examine the blade seal segments for tears in the half-thickness (overlap) areas.

(a) If one segment of the overlap area has a tear, do the steps that follow:

1) Cut a sufficient area from the overlap to fully remove the tear. Use scissors or a utility blade.

NOTE: The area of damage removal must be over or under an undamaged area of the adjacent blade seal segment.

(b) If both segments of the overlap area have a tear, do the steps that follow:

1) Replace one or both blade seal segments.

NOTE: If one blade seal segment is replaced, refer to the above step to repair the remaining damaged blade seal segment.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-12-12-020-004

(2) Examine the blade seal segments for tears in the full-thickness (non-overlap) areas.

(a) If you find a tear in a blade seal segment, replace the segment Main Landing Gear Wheel Well Blade Seal Removal, TASK 32-12-12-000-801.

SUBTASK 32-12-12-020-005

(3) Examine the seal segments for damage possibly caused by friction wear when a tire enters the wheel well.

NOTE: Worn edges from friction with tires is usual, and local fraying of fabric along the worn edges is permitted. If the worn edge has no tears or separated sections, then there is no limit to the depth of wear and operators may replace blade seals at their discretion. Be advised, however, that blade seals which have worn beyond the point of contact with the tire could contribute to drag in the wheel well area.

(a) If you find damage to the blade seals which appears to have been caused by spinning tires, perform a continuity check ANTISKID LANDING GEAR LEVER UP SWITCH - REMOVAL/INSTALLATION, PAGEBLOCK 32-42-51/401.

(b) If the problem persists, perform the Gear Retract Braking - Operational Test HYDRAULIC BRAKE SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 32-41-00/501.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-12-12-080-002

(1) Remove chocks around the tires of all the landing gear.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

M51962 S0006574918_V2

Main Landing Gear Wheel Well Blade Seal Inspection/Check
Figure 601/32-12-12-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**BLADE-TYPE
WHEEL WELL SEAL SEGMENT**

B

**BLADE-TYPE
WHEEL WELL SEAL SEGMENT
(EXAMPLE OF ACCEPTABLE FRICTION WEAR)**

B

M51959 S0006574919_V3

**Main Landing Gear Wheel Well Blade Seal Inspection/Check
Figure 601/32-12-12-990-802 (Sheet 2 of 3)**

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE OF DAMAGE REMOVAL IN AN OVERLAP AREA OF A WHEEL WELL BLADE SEAL)

C

(EXAMPLE)

A-A

1496768 S0000271948_V3

Main Landing Gear Wheel Well Blade Seal Inspection/Check
Figure 601/32-12-12-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR SHOCK STRUT DOORS - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the center door from the shock strut (referred to as the center door [1])

(2) An installation of the center door on the shock strut of the Main Landing Gear (MLG)

(3) A removal of the inner door from the shock strut (referred to as the inner door [2])

(4) An installation of the inner door on the shock strut of the MLG

(5) A removal of the door assembly from the shock strut of the MLG

(6) An installation of the door assembly on the shock strut of the MLG.

B. The assembly of the inner door and center door are referred to as the "door assembly" in this procedure.

C. It is not necessary to do the Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801, if you can do these steps:

(1) Make sure that the inner door [2] and center door [1] are being reinstalled on the same MLG.

(2) Make sure that the inner door [2], center door [1], and pushrod [45] that are being installed are the same ones that were removed.

(3) Make sure that no adjustment was made on the existing pushrod [45].

(4) Make sure that no adjustment was made to the hinges [20], no shims added or removed.

(5) Make sure that there is no damage to the lockwires on the pushrod [45].

TASK 32-13-11-000-802

2. Main Landing Gear Center Door Removal

(Figure 401)

A. General

(1) This task gives instructions to remove the center door.

NOTE: The inner and center door are components of the door assembly. The hinge fittings installed on the inner and center doors can change the part number of the door assembly. Do a check of the IPC to make sure that the inner and center door components are correct for the door assembly installed on the airplane.

(2) If the center door is left off for any flight, ferry or revenue, do the following steps:

(a) Remove and keep the Main Landing Gear (MLG) inner door(s) and center door(s)

(b) Ensure the following related parts are also removed from the airplane:

- Inner door pushrod
- All associated fasteners for the inner door pushrod
- Center door upper tie rods
- Center door bonding jumper cable attached to wiring harness (287A6108)
- All center door associated tie rod hardware and bonding jumper cable clamp and hardware
- All lower aft center door mount hardware including bolt retention devices, if it is installed.

(c) Ensure that the following parts remain on the aircraft:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

- All lower forward center door mount hardware including wire support bracket (287A6105), associated anti-rotation block and hardware
- Door attach bolt (BACB30NM6K*) and washers.

(d) Add the following parts:

- NAS1805 or BACN10JB or BACN11Z nut or equivalent and quantity as required.
- BACW10P533CA washer or equivalent.

(3) It is not necessary to do the Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801, if you can do these steps:

(a) Make sure that the inner door [2] and center door [1] are being reinstalled on the same MLG.

(b) Make sure that the inner door [2], center door [1], and pushrod [45] that are being installed are the same ones that were removed.

(c) Make sure that no adjustment was made on the existing pushrod [45].

(d) Make sure that no adjustment was made to the hinges [20], no shims added or removed.

(e) Make sure that there is no damage to the lockwires on the pushrod [45].

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
732	Left Main Landing Gear - Center Door
733	Left Main Landing Gear - Inboard Door
734	Left Main Landing Gear
742	Right Main Landing Gear - Center Door
743	Right Main Landing Gear - Inboard Door
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-13-11-480-003

WARNING OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-11-480-008

(2) Put chocks around the tires of all the landing gear (PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Main Landing Gear Center Door Removal

LOM 443-445, 450-452, 457, 461-463 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-020-002

(1) Do these steps to remove the center door [1]:

(a) Disconnect the jumper cable [106], screw [103], washers [104], clamp [105], and nut [107] from the MLG (View J and View K, Figure 401).

(b) Disconnect the jumper cable [28] from the center door [1] (View E, Figure 401).

(c) For the top aft hinge, remove the cotter pin [10], nut [9], washer [77], spacers [7], washer [5], and bolt [4] to disconnect the tie rod [3] from the tray assembly [6] on the shock strut [8] (View B, Figure 401).

(d) For the top forward hinge, remove the cotter pin [12], nut [13], washer [78], spacers [14], washer [15], and bolt [16] to disconnect the tie rod [11] from the tray assembly [6] on the shock strut [8] (View C, Figure 401).

(e) For the bottom aft hinge, remove the bolt [17], washer [18], laminated washer [19], barrel nut [47], and retainer [48] to disconnect the bottom aft of the center door [1] from the shock strut [8] (View D, Figure 401).

(f) For the bottom forward hinge, remove the bolt [29], washer [30], laminated washer [31], barrel nut [49], and retainer [50] to disconnect the bottom forward of center door [1] from the shock strut [8] in the forward position (View E, Figure 401).

(g) Remove the cotter pins [24], nuts [23], washers [22], and bolts [21] from the forward and aft hinges [20] to disconnect the center door [1] from the inner door [2] (View D, Figure 401).

1) If it is necessary, remove the bolts [26], bolt [27] and pull the seal [25] to the down position for easy removal of the bolts [21] (View D and E, Figure 401).

(h) Remove the center door [1] from the airplane.

LOM 404, 411, 416, 420, 422, 425-431 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-020-005

(2) Do these steps to remove the center door [1]:

(a) Disconnect the jumper cable [106], screw [103], washers [104], clamp [105], and nut [107] from the MLG (View J and View K, Figure 401).

(b) Disconnect the jumper cable [28] from the center door [1] (View E, Figure 401).

(c) For the top aft hinge, remove the cotter pin [10], nut [9], washer [77], spacers [7], washer [5], and bolt [4] to disconnect the tie rod [3] from the tray assembly [6] on the shock strut [8] (View B, Figure 401).

(d) For the top forward hinge, remove the cotter pin [12], nut [13], washer [78], spacers [14], washer [15], and bolt [16] to disconnect the tie rod [11] from the tray assembly [6] on the shock strut [8] (View C, Figure 401).

(e) Do these steps to remove the anti-rotation plates and clips (View H and View I, Figure 401):

1) Remove the bolts [53], nuts [56], washers [54], and washers [55].

2) Remove the clip [51].

3) Remove the bolts [63], nuts [66], washers [64], and washers [65].

4) Remove the upper plate [72], shim [90], and spacer [91].

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(f) For the bottom aft hinge, remove the bolt [17], anti-rotation clip assembly [52], washer [18], washers [79], washers [101], washers [109], barrel nut [47], and retainer [48] to disconnect the center door [1] from the shock strut [8] (View H, Figure 401).

(g) For the bottom forward hinge, remove the bolt [29], washer [30], washer [74], washers [73], washers [76], washers [108], barrel nut [49], and retainer [50] to disconnect the center door [1] from the shock strut [8] (View I, Figure 401).

(h) Remove the cotter pins [24], nuts [23], washers [22], and bolts [21] from the forward and aft hinges [20] to disconnect the center door [1] from the inner door [2] (View D, Figure 401).

1) If it is necessary, remove the bolts [26], bolt [27] and pull the seal [25] to the down position for easy removal of the bolts [21] (View D and View E, Figure 401).

(i) Remove the center door [1] from the airplane.

LOM 433, 434 PRE SB 737-52-1170 GRP 3 FULL CAPTURE

SUBTASK 32-13-11-020-010

(3) Do these steps to remove the center door [1]:

(a) Disconnect the jumper cable [106], screw [103], washers [104], clamp [105], and nut [107] from the Main Landing Gear (View J and View K, Figure 401).

(b) Disconnect the jumper cable [28] from the center door [1] (View E, Figure 401).

(c) For the top aft hinge, remove the cotter pin [10], nut [9], washer [77], spacers [7], washer [5], and bolt [4] to disconnect the tie rod [3] from the tray assembly [6] on the shock strut [8] (View B, Figure 401).

(d) For the top forward hinge, remove the cotter pin [12], nut [13], washer [78], spacers [14], washer [15], and bolt [16] to disconnect the tie rod [11] from the tray assembly [6] on the shock strut [8] (View C, Figure 401).

(e) Do these steps to remove the anti-rotation plates (View H and View I, Figure 401):

1) Remove the bolts [96], nuts [99], washers [98], and washers [102].

2) Remove the upper plate [95], shim [97], and spacer [89].

3) Remove the bolts [84], nuts [87], washers [85], and washers [86].

4) Remove the clip [88], shim [90], and spacer [91].

(f) For the bottom aft hinge, remove the bolt [17], washer [18], washers [79], washer [46], lower plate [100], washers [101], washers [109], barrel nut [47], and retainer [48] to disconnect the center door [1] from the shock strut [8] (View H, Figure 401).

(g) For the bottom forward hinge, remove the bolt [29], washer [30], washers [73], washer [67], washers [76], washers [108], barrel nut [49], and retainer [50] to disconnect the center door [1] from the shock strut [8] (View I, Figure 401).

(h) Remove the cotter pins [24], nuts [23], washers [22], and bolts [21] from the forward and aft hinges [20] to disconnect the center door [1] from the inner door [2] (View D, Figure 401).

1) If it is necessary, remove the bolts [26], bolt [27] and pull the seal [25] to the down position for easy removal of the bolts [21] (View D and View E, Figure 401).

(i) Remove the center door [1] from the airplane.

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LOM 402, 406, 407, 412, 415, 423, 424, 432, 437-442, 446, 447, 453-456, 458-460, 464-999; LOM 404, 411, 416, 420, 422, 425-431, 433, 434, 443-445, 450-452, 457, 461-463 POST SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-020-014

(4) Do these steps to remove the center door [1]:

(a) Disconnect the jumper cable [106], screw [103], washers [104], clamp [105], and nut [107] from the MLG (View J and View K, Figure 401).

(b) Disconnect the jumper cable [28] from the center door [1] (View E, Figure 401).

(c) For the top aft hinge, remove the cotter pin [10], nut [9], washer [77], spacers [7], washer [5], and bolt [4] to disconnect the tie rod [3] from the tray assembly [6] on the shock strut [8] (View B, Figure 401).

(d) For the top forward hinge, remove the cotter pin [12], nut [13], washer [78], spacers [14], washer [15], and bolt [16] to disconnect the tie rod [11] from the tray assembly [6] on the shock strut [8] (View C, Figure 401).

(e) Do these steps to remove the anti-rotation plates and clips (View H and View I, Figure 401):

1) Remove the bolt [70], washer [71], washer [58], and nut [59].

2) Remove the plate [68].

3) Remove the bolts [84], washers [85], washers [57], and nuts [87].

4) Remove the clip [88], shim [90], and spacer [91].

(f) For the bottom aft hinge, remove the bolt [17], clip [69], washer [18], washers [79], washer [110], washers [101], barrel nut [47], and retainer [48] to disconnect the center door [1] from the shock strut [8] (View H, Figure 401).

1) Make a note of the quantity and location of the washers [79], washer [110], and washers [101].

(g) For the bottom forward hinge, remove the bolt [29], washer [30], washers [73], washer [67], washer [76], barrel nut [49], and retainer [50] to disconnect the center door [1] from the shock strut [8] (View I, Figure 401).

1) Make a note of the quantity and location of the washers [67] and washers [76].

(h) Remove the cotter pins [24], nuts [23], washers [22], and bolts [21] from the forward and aft hinges [20] to disconnect the center door [1] from the inner door [2] (View D, Figure 401).

1) If it is necessary, remove the bolts [26], bolt [27] and pull the seal [25] to the down position for easy removal of the bolts [21] (View D and View E, Figure 401).

(i) Remove the center door [1] from the airplane.

LOM ALL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 1 of 13)

I

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR TOP AFT HINGE CONNECTION

B

CENTER DOOR TOP FORWARD HINGE CONNECTION

C

F74093 S0006574925_V5

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 2 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

D

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

E

F74190 S0006574926_V6

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 3 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION (PARTIALLY CAPTURED CLIP)

D

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION (PARTIALLY CAPTURED CLIP)

E

K26037 S0006574927_V7

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 4 of 13)

I

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

H

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

I

1 ADJUST SHIM THICKNESS TO MATCH WASHERS
2 USE 0 - 3 WASHERS TO GET CORRECT FIT/CLEARANCE
3 USE 0 - 4 WASHERS TO GET CORRECT FIT/CLEARANCE

2338493 S0000532808_V4

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 5 of 13)

I

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION
(ANTI-ROTATION PLATES - LEFT MLG)

CENTER DOOR BOTTOM AFT HINGE CONNECTION
(ANTI-ROTATION PLATES - RIGHT MLG)

2201364 S0000490249_V10

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 6 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

E

3081770 S0000837593_V1

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 7 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION
(LEFT MLG SHOWN, RIGHT SIDE SIMILAR)

H

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

I

1 ADJUST SHIM THICKNESS TO MATCH WASHERS
2 USE 0 - 3 WASHERS TO GET CORRECT FIT/CLEARANCE
3 USE 0 - 4 WASHERS TO GET CORRECT FIT/CLEARANCE

2201987 S0000490305_V8

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 8 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION (FULLY CAPTURED CLIP)

D

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION (FULLY CAPTURED CLIP)

E

2339714 S0000532807_V6

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 9 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

H

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

I

1 INSTALL A MAXIMUM OF THREE SHIMS. IF NECESSARY, REMOVE AND PEEL THE SHIM LAMINATION TO MAKE SURE THAT THE CLIP ENGAGES THE BOLT.

2 PRE-ADJUSTMENT WASHER STACK-UP IS SHOWN

2339746 S0000532809_V10

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 10 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INNER DOOR PUSHROD CONNECTION
(RIGHT SIDE)

F

F74096 S0006574929_V2

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 11 of 13)

I

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INNER DOOR PUSHROD CONNECTION (LEFT SIDE)

G

M57626 S0006574930_V2

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 12 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

J

MAIN LANDING GEAR JUMPER CABLE ATTACHMENT
(VIEW IN THE FORWARD DIRECTION)

K

2364486 S0000541167_V2

Main Landing Gear Shock Strut Doors Installation
Figure 401/32-13-11-990-801 (Sheet 13 of 13)

I

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-13-11-420-802

3. **Main Landing Gear Center Door Installation**
(Figure 401)

A. **General**

(1) This task gives instructions to install the center door.

NOTE: The inner and center door are components of the door assembly. The hinge fittings installed on the inner and center doors can change the part number of the door assembly. Do a check of the IPC to make sure that the inner and center door components are correct for the door assembly installed on the airplane.

B. **References**

Reference	Title
20-10-34 P/B 701	METAL SURFACES - CLEANING/PAINTING
20-10-37 P/B 601	ELECTRICAL BONDING - INSPECTION/CHECK
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES
SWPM 20-20-10	Replacement of Ground Studs and Bonding Jumper Installation

C. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

D. **Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00130	Alcohol - Isopropyl	TT-I-735
G01043	Cloth - Lint-free	
G02439	Brush - Nylon Bristle	

E. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Center door	32-13-21-01-395	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-03-470	LOM ALL
		32-13-21-03-475	LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
10	Pin	32-13-21-01-180	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-180	LOM 437-447, 450-999
12	Pin	32-13-21-01-180	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-180	LOM 437-447, 450-999
24	Pin	32-13-21-03-205	LOM ALL

F. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
732	Left Main Landing Gear - Center Door
733	Left Main Landing Gear - Inboard Door
734	Left Main Landing Gear
742	Right Main Landing Gear - Center Door
743	Right Main Landing Gear - Inboard Door
744	Right Main Landing Gear

G. Prepare for the Installation

SUBTASK 32-13-11-480-004

WARNING OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-11-480-009

(2) Put chocks around the tires of all the landing gear.

SUBTASK 32-13-11-200-002

(3) Make sure that the center door [1] has the fully captured clip assemblies for bolt retention installed (Figure 401).

H. Main Landing Gear Center Door Installation

I **LOM 443-445, 450-452, 457, 461-463 PRE SB 737-52-1170 MODIFICATION**

SUBTASK 32-13-11-400-005

(1) Do these steps to install the center door [1] (View D and View E, Figure 401):

(a) Put the center door [1] in its position for connection to the shock strut [8] and inner door [2].

(b) For the bottom aft hinge, install the bolt [17], washer [18], laminated washer [19], barrel nut [47], and retainer [48].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) For the bottom forward hinge, install the bolt [29], washer [30], laminated washer [31], barrel nut [49], and retainer [50].

LOM 404, 411, 416, 420, 422, 425-431 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-400-006

(2) Do these steps to install the center door [1] (View H and View I, Figure 401):

(a) Put the center door [1] in its position for connection to the shock strut [8] and inner door [2].

(b) For the bottom aft hinge, install the bolt [17], anti-rotation clip assembly [52], washer [18], washers [79], washers [101], washers [109], barrel nut [47], and retainer [48].

(c) For the bottom forward hinge, install the bolt [29], washer [30], washer [74], washers [73], washers [76], washers [108], barrel nut [49], and retainer [50].

LOM 433, 434 PRE SB 737-52-1170 GRP 3 FULL CAPTURE

SUBTASK 32-13-11-400-001

(3) Do these steps to install the center door [1] (View H and View I, Figure 401):

(a) Put the center door [1] in its position for connection to the shock strut [8] and inner door [2].

(b) For the bottom aft hinge, install the bolt [17], washer [18], washers [79], washer [46], lower plate [100], washers [101], washer [109], barrel nut [47], and retainer [48].

1) Make sure that you install the lower plate [100] in the correct orientation.

NOTE: The orientation of the anti-rotation plates is different for the left and right MLG (View D, Figure 401).

(c) For the bottom forward hinge, install the bolt [29], washer [30], washers [73], washer [67], washers [76], washer [108], barrel nut [49], and retainer [50].

LOM 402, 406, 407, 412, 415, 423, 424, 432, 437-442, 446, 447, 453-456, 458-460, 464-999; LOM 404, 411, 416, 420, 422, 425-431, 433, 434, 443-445, 450-452, 457, 461-463 POST SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-400-004

(4) Do these steps to install the center door [1] (View H and View I, Figure 401):

(a) Put the center door [1] in its position for connection to the shock strut [8] and inner door [2].

(b) For the bottom aft hinge, install the bolt [17], plate [68], clip [69], washer [18], washers [79], washer [110], washers [101], barrel nut [47], and retainer [48].

NOTE: It is permitted to use the washer stack-up from the removal procedure.

(c) For the bottom forward hinge, install the bolt [29], washer [30], washers [73], washers [67], washers [76], barrel nut [49], and retainer [50].

NOTE: It is permitted to use the washer stack-up from the removal procedure.

LOM ALL

SUBTASK 32-13-11-400-002

(5) Continue the center door [1] installation (View B and View C, Figure 401):

(a) For the top aft hinge, install the bolt [4], washer [5], spacers [7], washer [77], and nut [9] to connect the tie rod [3] to the tray assembly [6] on the shock strut [8].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Do not tighten the nut [9].

NOTE: Final torque to the nut and installation of the cotter pin will be done after final adjustments to the doors are made in the subsequent step.

(b) For the top forward hinge, install the bolt [16], washer [15], spacers [14], washer [78], and nut [13] to connect the tie rod [11] to the tray assembly [6] on the shock strut [8].

1) Do not tighten the nut [13].

NOTE: Final torque to the nut and installation of the cotter pin will be done after final adjustments to the doors are made in the subsequent step.

(c) Install the bolts [21] to attach the center door [1] to the inner door [2].

1) If the bolts [26] and bolt [27] are installed, remove them and pull the seal [25] slightly to the down position for easy installation of the bolts [21].

2) Install bolts [26] and bolt [27].

(d) Install the washers [22] and nuts [23] on the bolts [21].

1) Do not tighten the nuts [23].

NOTE: Final torque to the nuts and installation of the cotter pins will be done after final adjustments to the doors are made in the subsequent step.

(e) Prepare the mating surface of the jumper cable [28] and center door [1] (PAGEBLOCK 20-10-34/701).

(f) Connect the jumper cable [28] to the center door [1] (View D or View E, Figure 401).

(g) Use an intrinsically safe approved bonding meter, COM-1550, to do a bonding check (PAGEBLOCK 20-10-37/601).

(h) Apply a fillet seal of sealant, A00247, to the bonding jumper terminal connection.

SUBTASK 32-13-11-820-002

(6) Do this task: Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801.

(a) It is not necessary to do this task, if you can do these steps:

1) Make sure that the inner door [2] and center door [1] are being reinstalled on the same Main Landing Gear (MLG).

2) Make sure that the inner door [2], center door [1], and pushrod [45] that are being installed are the same ones that were removed.

3) Make sure that no adjustment was made on the existing pushrod [45].

4) Make sure that no adjustment was made to the hinges [20], no shims added or removed.

5) Make sure that there is no damage to the lockwires on the pushrod [45].

LOM 404, 411, 416, 420, 422, 425-431 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-420-019

(7) Do these steps to safety the fasteners on the center door [1] (View H and View I, Figure 401):

(a) Tighten the bolt [17] and bolt [29] to 410 in-lb (46.3 N·m).

NOTE: If it is necessary, bolts can be loosened one quarter turn for installation of the anti-rotation clips.

NOTE: The minimum torque value is 220 in-lb (24.9 N·m).

(b) Adjust the thickness of shim [90] to match washer thickness.

(c) Install the anti-rotation clip [51], bolts [53], washers [54], washers [55], and nuts [56].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Install the anti-rotation upper plate [72], shim [90], spacer [91], bolts [63], washers [64], washers [65], and nuts [66].

LOM 433, 434 PRE SB 737-52-1170 GRP 3 FULL CAPTURE

SUBTASK 32-13-11-420-005

(8) Do these steps to safety the fasteners on the center door [1] (View H and View I, Figure 401):

(a) Tighten the bolt [17] and bolt [29] to 398 in-lb (45.0 N·m) - 422 in-lb (47.7 N·m).

1) Tighten the bolts to the low torque value.

2) If it is necessary, tighten the bolts to align head with the anti-rotation plates.

(b) Adjust the thickness of shim [97] and shim [90] to match washer thickness.

(c) Apply sealant, A00247, as a fay seal between upper and lower anti-rotation plates.

(d) Install the anti-rotation upper plate [95], shim [97], lower plate [100], spacer [89], bolts [96], washers [98], washers [102], and nuts [99].

NOTE: The orientation of the anti-rotation plates is different for the left and right MLG (View D, Figure 401).

(e) Install the anti-rotation clip [88], shim [90], spacer [91], bolts [84], washers [85], washers [86], and nuts [87].

LOM 402, 406, 407, 412, 415, 423, 424, 432, 437-442, 446, 447, 453-456, 458-460, 464-999; LOM 404, 411, 416, 420, 422, 425-431, 433, 434, 443-445, 450-452, 457, 461-463 POST SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-420-018

(9) Do these steps to safety the fasteners on the center door [1]:

(a) Tighten the bolt [17] and bolt [29] to 398 in-lb (45.0 N·m) - 422 in-lb (47.7 N·m).

1) Tighten the bolts to the low torque value.

2) If it is necessary, tighten the bolts to align head with the anti-rotation plates.

(b) Adjust the thickness of shim [90] to match washer thickness.

(c) Install the anti-rotation plate [68], clip [69], bolt [70], washer [71], washer [58], and nut [59].

(d) Install the anti-rotation clip [88], shim [90], spacer [91], bolts [84], washers [85], washers [57], and nuts [87].

LOM 443-445, 450-452, 457, 461-463 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-420-023

(10) Tighten the bolt [17] and bolt [29] to 220 in-lb (25 N·m) - 410 in-lb (46 N·m).

LOM ALL

SUBTASK 32-13-11-420-006

(11) Tighten the nut [9].

(a) Install the cotter pin [10] in the hole in the bolt [4].

(b) If it is necessary, loosen the nut [9] to the nearest castellation to align the holes for the cotter pin [10] (View B, Figure 401).

SUBTASK 32-13-11-420-007

(12) Tighten the nut [13].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Install the cotter pin [12] in the hole in the bolt [16].

(b) If it is necessary, loosen the nut [13] to the nearest castellation to align the holes for the cotter pin [12] (View C, Figure 401).

SUBTASK 32-13-11-420-008

(13) Tighten the nut [23].

(a) Install the cotter pins [24] in the hole in the bolts [21].

(b) If it is necessary, loosen the nuts [23] to the nearest castellation to align the holes for the cotter pins [24] (View D, Figure 401).

SUBTASK 32-13-11-400-012

(14) Do these steps to prepare the jumper cable [106] and center door [1] for installation:

(a) Use Cleaning Procedure 5 to prepare the attachment surface for the jumper cable [106] on the main landing gear (SWPM 20-20-00).

1) Use a new lint-free cloth, G01043, or brush, G02439, to apply alcohol, B00130.

(b) Use Cleaning Procedure 5 to prepare the clamp [105] (surface and tab) and terminal (SWPM 20-20-00).

1) Use a new lint-free cloth, G01043, or brush, G02439, to apply alcohol, B00130.

SUBTASK 32-13-11-420-025

(15) Install the jumper cable [106], screw [103], washers [104], clamp [105], and nut [107] on the main landing gear (View J and View K, Figure 401).

SUBTASK 32-13-11-280-001

(16) Use an intrinsically safe approved bonding meter, COM-1550, to do a bonding check (SWPM 20-20-10).

SUBTASK 32-13-11-390-001

(17) Apply a fillet seal with sealant, A00247, to the jumper cable [106] and fasteners (SWPM 20-20-10).

END OF TASK

TASK 32-13-11-000-804

4. Main Landing Gear Inner Door Removal

(Figure 401)

A. General

(1) This task provides instructions to remove the inner door.

NOTE: The inner and center door are components of the door assembly. The hinge fittings installed on the inner and center doors can change the part number of the door assembly. Do a check of the illustrated parts catalog to make sure that the inner and center door components are correct for the door assembly installed on the airplane.

(2) If the inner door is left off for any flight, ferry or revenue, do the following steps:

(a) Remove and keep the Main Landing Gear (MLG) inner door.

(b) Ensure the following related parts are also removed from the airplane:

- Inner door pushrod
- Bonding (jumper) cable that connects the inner door to the center door
- All associated fasteners for the inner door hinges, inner door pushrod, and bonding (jumper) cable.

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(3) It is not necessary to do the Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801, if you can do these steps:

(a) Make sure that the inner door [2] and center door [1] are being reinstalled on the same MLG.

(b) Make sure that the inner door [2], center door [1], and pushrod [45] that are being installed are the same ones that were removed.

(c) Make sure that no adjustment was made on the existing pushrod [45].

(d) Make sure that no adjustment was made to the hinges [20], no shims added or removed.

(e) Make sure that there is no damage to the lockwires on the pushrod [45].

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
732	Left Main Landing Gear - Center Door
733	Left Main Landing Gear - Inboard Door
734	Left Main Landing Gear
742	Right Main Landing Gear - Center Door
743	Right Main Landing Gear - Inboard Door
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-13-11-480-010

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-11-480-011

(2) Put chocks around the tires of all the landing gear (PAGEBLOCK 10-11-05/201).

E. Main Landing Gear Inner Door Removal

SUBTASK 32-13-11-020-004

(1) Do these steps to remove the inner door [2]:

(a) Disconnect the jumper cable [28] from the inner door [2].

(b) Examine the condition of the pushrod [45] for wear.

(c) If you need to replace the pushrod [45], do this step:

1) Remove the cotter pin [43], nut [42], washer [41], spacer [40], washer [39], and bolt [38] to disconnect the pushrod [45] from the lower side strut [44].

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(d) If you do not need to replace the pushrod [45], do this step:

1) Remove the cotter pin [37], nut [36], washer [35], spacer [34], washer [33], and bolt [32] to disconnect the inner door [2] from the pushrod [45].

(e) Remove the cotter pins [24], nuts [23], washers [22], and bolts [21] from the forward and aft hinges [20] to disconnect the inner door [2] from the center door [1].

1) If it is necessary, remove the bolts [26], bolt [27] and pull the seal [25] slightly to the down position for easy removal of the bolts [21].

(f) Remove the inner door [2] from the airplane.

——— END OF TASK ———

TASK 32-13-11-420-804

5. Main Landing Gear Inner Door Installation

(Figure 401)

A. General

(1) This task provides instructions to install the inner door.

NOTE: The inner and center door are components of the door assembly. The hinge fittings installed on the inner and center doors can change the part number of the door assembly. Do a check of the illustrated parts catalog to make sure that the inner and center door components are correct for the door assembly installed on the airplane.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
20-10-34 P/B 701	METAL SURFACES - CLEANING/PAINTING
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES
SWPM 20-20-10	Replacement of Ground Studs and Bonding Jumper Installation

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

D. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00130	Alcohol - Isopropyl	TT-I-735

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(Continued)

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	AMS3819 Class 1 Grade A or B Form 1 (Supersede BMS15-5 CL A)
G50398	Pad - Adbrasive, Scotch-Brite Type S, Abrasive Pad	
G50492	Pad - 3M Scotch Brite 7448 Ultra Fine Pad	MIL-A-9962A Type III Grade AAA

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Inner door	32-13-21-01-350	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-355	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-357	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-358	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-605	LOM 437-447, 450-999
24	Pin	32-13-21-03-205	LOM ALL
37	Pin	32-13-21-01-203	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-210	LOM 437-447, 450-999
43	Pin	32-13-21-01-203	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-204	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-215	LOM 437-447, 450-999
		32-13-21-04-220	LOM 437-447, 450-999

F. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
732	Left Main Landing Gear - Center Door
733	Left Main Landing Gear - Inboard Door
734	Left Main Landing Gear

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(Continued)

Zone	Area
742	Right Main Landing Gear - Center Door
743	Right Main Landing Gear - Inboard Door
744	Right Main Landing Gear

G. Prepare for the Installation

SUBTASK 32-13-11-480-012

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-11-480-013

(2) Put chocks around the tires of all the landing gear (PAGEBLOCK 10-11-05/201).

H. Main Landing Gear Inner Door Installation

SUBTASK 32-13-11-420-004

(1) Do these steps to install the inner door [2]:

(a) Put the inner door [2] in its position for connection to the center door [1].

(b) Install the bolts [21] to hold the inner door [2] to the center door [1].

1) If the bolts [26] and bolt [27] are installed, remove them and pull the seal [25] slightly to the down position for easy installation of the bolts [21].

(c) Install the washers [22] and nuts [23] to the bolts [21].

NOTE: Do not tighten the nuts. Final torque to the nuts and installation of the cotter pins will be done after final adjustments to the doors are made in the subsequent step.

(d) If you need to connect the inner door [2] to the pushrod [45], do these steps:

1) Lubricate the shank of the bolt [32] and spacer [34] with grease, D00633.

2) Remove all unwanted grease, D00633.

3) Install the bolt [32], washer [33], spacer [34], washer [35], and nut [36] to hold the inner door [2] to the pushrod [45].

a) Hand tighten the nut [36] until after final adjustments to the doors are made in the subsequent steps.

(e) If you need to connect the pushrod [45] to the lower side strut [44], do these steps:

1) Lubricate the shank of the bolt [38] and spacer [40] with grease, D00633.

2) Remove all unwanted grease, D00633.

3) Install the bolt [38], washer [39], spacer [40], washer [41], and nut [42] to connect the pushrod [45] to the lower side strut [44].

a) Hand tighten the nut [42] until after final adjustments to the doors are made in the subsequent steps.

(f) Do these steps to prepare the jumper cable [28] and inner door [2] for installation:

1) Remove the sealant from the inner door [2] (PAGEBLOCK 20-10-34/701).

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2) Clean the fasteners and the mating surfaces of the jumper cable [28] and inner door [2] (SWPM 20-20-00):

a) Use Cleaning Procedure 1 to manually clean the mating surface of the inner door [2].

<1> Use a very fine Scotch-Brite Type S pad, G50398, or an ultrafine Scotch-Brite 7448 pad, G50492.

<2> Twist the pad with a circular movement while you press with your thumb.

b) Use Cleaning Procedure 5 to clean the jumper cable [28] terminal lugs, corrosive protective washer, and mating surface of the inner door [2].

<1> Use a new cotton wiper, G00034, made moist with alcohol, B00130.

<2> Use a new cotton wiper, G00034, to dry the surfaces.

(g) Connect the jumper cable [28] to the inner door [2].

(h) Measure the electrical bonding resistance between the jumper cable [28] and inner door [2] (SWPM 20-20-10).

1) Use an intrinsically safe approved bonding meter, COM-1550.

(i) Apply a fillet seal with sealant, A00247, to the jumper cable [28] terminal lugs and fasteners (SWPM 20-20-10).

SUBTASK 32-13-11-820-009

(2) Do this task: Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801.

(a) It is not necessary to do this task if you can do these steps:

1) Make sure that the inner door [2] and center door [1] are being reinstalled on the same Main Landing Gear (MLG).

2) Make sure that the inner door [2], center door [1], and pushrod [45] that are being installed are the same ones that were removed.

3) Make sure that no adjustment was made to the hinges [20], no shims added or removed.

4) Make sure that there is no damage to the lockwires on the pushrod [45].

5) Make sure that the MLG center door [1] has not been adjusted since the inner door [2] was removed.

SUBTASK 32-13-11-420-009

(3) Tighten the nuts [23].

(a) Install the cotter pins [24] in the hole in the bolts [21].

(b) If it is necessary, loosen the nuts [23] to the nearest castellation to align the holes for the cotter pins [24].

SUBTASK 32-13-11-420-010

(4) Tighten the nut [36].

(a) Install the cotter pin [37] in the hole in the bolt [32].

(b) If it is necessary, loosen the nut [36] to the nearest castellation to align the holes for the cotter pin [37].

SUBTASK 32-13-11-420-011

(5) Tighten the nut [42].

(a) Install the cotter pin [43] in the hole in the bolt [38].

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(b) If it is necessary, loosen the nut [42] to the nearest castellation to align the holes for the cotter pin [43].

——— END OF TASK ———

TASK 32-13-11-000-803

6. Main Landing Gear Door Assembly Removal

(Figure 401)

A. General

(1) This task gives instructions to remove the door assembly.

(a) It will give you instruction on removal of the inner door.

(b) It will then give you instruction on removal of the center door.

(c) The two doors will stay attached.

(2) It is not necessary to do the Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801, if you can do these steps:

(a) Make sure that the inner door [2] and center door [1] are being reinstalled on the same Main Landing Gear (MLG).

(b) Make sure that the inner door [2], center door [1], and pushrod [45] that are being installed are the same ones that were removed.

(c) Make sure that no adjustment was made on the existing pushrod [45].

(d) Make sure that no adjustment was made to the hinges [20], no shims added or removed.

(e) Make sure that there is no damage to the lockwires on the pushrod [45].

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
732	Left Main Landing Gear - Center Door
733	Left Main Landing Gear - Inboard Door
734	Left Main Landing Gear
742	Right Main Landing Gear - Center Door
743	Right Main Landing Gear - Inboard Door
744	Right Main Landing Gear

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D. Prepare for the Removal

SUBTASK 32-13-11-480-005

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-11-480-014

(2) Put chocks around the tires of all the landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

E. Main Landing Gear Door Assembly Removal

SUBTASK 32-13-11-020-003

(1) Do the steps to remove the door assembly at the inner door [2] location:

(a) Examine the condition of the pushrod [45] for worn areas.

(b) If it is necessary to replace the pushrod [45], do this step:

1) Remove the cotter pin [43], nut [42], washer [41], spacer [40], washer [39] and the bolt [38] to disconnect the pushrod [45] from the lower side strut [44].

(c) If it is not necessary to replace the pushrod [45], do this step:

1) Remove the cotter pin [37], nut [36], washer [35], spacer [34], washer [33] and the bolt [32] to disconnect the inner door [2] from the pushrod [45].

I **LOM 443-445, 450-452, 457, 461-463 PRE SB 737-52-1170 MODIFICATION**

SUBTASK 32-13-11-020-011

(2) Do the steps to remove the door assembly at the center door [1] location:

(a) Disconnect the jumper cable [106], screw [103], washers [104], clamp [105] and nut [107] from the MLG (View J and K, Figure 401).

(b) For the top aft hinge, remove the cotter pin [10], nut [9], washer [77], spacers [7], washer [5] and bolt [4] to disconnect the tie rod [3] from the tray assembly [6] on the shock strut [8] (View B, Figure 401).

(c) For the top forward hinge, remove the cotter pin [12], nut [13], washer [78], spacers [14], washer [15] and bolt [16] to disconnect the tie rod [11] from the tray assembly [6] on the shock strut [8] (View C, Figure 401).

(d) For the bottom aft hinge, remove the bolt [17], washer [18], laminated washer [19], barrel nut [47] and retainer [48] to disconnect the center door [1] from the shock strut [8] (View D, Figure 401).

(e) For the bottom forward hinge, remove the bolt [29], washer [30], laminated washer [31], barrel nut [49] and retainer [50] to disconnect the center door [1] from the shock strut [8] (View E, Figure 401).

(f) Remove the door assembly (center door [1] and inner door [2]) from the airplane.

LOM 404, 411, 416, 420, 422, 425-431 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-020-012

(3) Do the steps to remove the door assembly at the center door [1] location:

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(a) Disconnect the jumper cable [106], screw [103], washers [104], clamp [105] and nut [107] from the MLG (View J and K, Figure 401).

(b) For the top aft hinge, remove the cotter pin [10], nut [9], washer [77], spacers [7], washer [5] and bolt [4] to disconnect the tie rod [3] from the tray assembly [6] on the shock strut [8] (View B, Figure 401).

(c) For the top forward hinge, remove the cotter pin [12], nut [13], washer [78], spacers [14], washer [15] and bolt [16] to disconnect the tie rod [11] from the tray assembly [6] on the shock strut [8] (View C, Figure 401).

(d) Do these steps to remove anti-rotation plates and clips (View H and I, Figure 401):

1) Remove the bolts [53], nuts [56], washers [54] and washers [55].

2) Remove the clip [51].

3) Remove the bolts [63], nuts [66], washers [64] and washers [65].

4) Remove the upper plate [72], shim [90] and spacer [91].

(e) For the bottom aft hinge, remove the bolt [17], anti-rotation clip assembly [52], washer [18], washers [79], washers [101], washers [109], barrel nut [49] and retainer [48] to disconnect the center door [1] from the shock strut [8] (View H, Figure 401).

(f) For the bottom forward hinge, remove the bolt [29], washer [30], washer [74], washers [73], washers [76], washers [108], barrel nut [49] and retainer [50] to disconnect the center door [1] from the shock strut [8] (View I, Figure 401).

(g) Remove the door assembly (center door [1] and inner door [2]) from the airplane.

LOM 433, 434 PRE SB 737-52-1170 GRP 3 FULL CAPTURE

SUBTASK 32-13-11-020-013

(4) Do the steps to remove the door assembly at the center door [1] location:

(a) Disconnect the jumper cable [106], screw [103], washers [104], clamp [105] and nut [107] from the MLG (View J and K, Figure 401).

(b) For the top aft hinge, remove the cotter pin [10], nut [9], washer [77], spacers [7], washer [5] and bolt [4] to disconnect the tie rod [3] from the tray assembly [6] on the shock strut [8] (View B, Figure 401).

(c) For the top forward hinge, remove the cotter pin [12], nut [13], washer [78], spacers [14], washer [15] and bolt [16] to disconnect the tie rod [11] from the tray assembly [6] on the shock strut [8] (View C, Figure 401).

(d) Do these steps to remove the anti-rotation plates (View H and I, Figure 401):

1) Remove the bolts [96], nuts [99], washers [98] and washers [102].

2) Remove the upper plate [95], shim [97] and spacer [89].

3) Remove the bolts [84], nuts [87], washers [85] and washers [86].

4) Remove the clip [88], shim [90] and spacer [91].

(e) For the bottom aft hinge, remove the bolt [17], washer [18], washers [79], washer [46], lower plate [100], washers [101], washers [109], barrel nut [47] and retainer [48] to disconnect the center door [1] from the shock strut [8] (View H, Figure 401).

(f) For the bottom forward hinge, remove the bolt [29], washer [30], washers [73], washer [67], washers [76], washers [108], barrel nut [49] and retainer [50] to disconnect the center door [1] from the shock strut [8] (View I, Figure 401).

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(g) Remove the door assembly (center door [1] and inner door [2]) from the airplane.

LOM 402, 406, 407, 412, 415, 423, 424, 432, 437-442, 446, 447, 453-456, 458-460, 464-999; LOM 404, 411, 416, 420, 422, 425-431, 433, 434, 443-445, 450-452, 457, 461-463 POST SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-020-015

(5) Do the steps to remove the door assembly at the center door [1] location:

(a) Disconnect the jumper cable [106], screw [103], washers [104], clamp [105] and nut [107] from the MLG (View J and K, Figure 401).

(b) For the top aft hinge, remove the cotter pin [10], nut [9], washer [77], spacers [7], washer [5] and bolt [4] to disconnect the tie rod [3] from the tray assembly [6] on the shock strut [8] (View B, Figure 401).

(c) For the top forward hinge, remove the cotter pin [12], nut [13], washer [78], spacers [14], washer [15] and bolt [16] to disconnect the tie rod [11] from the tray assembly [6] on the shock strut [8] (View C, Figure 401).

(d) Do these steps to remove the anti-rotation plates and clips (View H and I, Figure 401):

1) Remove the bolt [70], washer [71], washer [58] and nut [59].

2) Remove the plate [68].

3) Remove the bolts [84], washers [85], washers [57] and nuts [87].

4) Remove the clip [88], shim [90] and spacer [91].

(e) For the bottom aft hinge, remove the bolt [17], clip [69], washer [18], washers [79], washers [101], washer [110], barrel nut [47] and retainer [48] to disconnect the center door [1] from the shock strut [8] (View H, Figure 401).

1) Make a note of the quantity and location of the washers [79], washer [110], and washers [101].

(f) For the bottom forward hinge, remove the bolt [29], washer [30], washer [73], washers [67], washers [76], barrel nut [49] and retainer [50] to disconnect the center door [1] from the shock strut [8] (View I, Figure 401).

1) Make a note of the quantity and location of the washers [67] and washers [76].

(g) Remove the door assembly (center door [1] and inner door [2]) from the airplane.

LOM ALL

END OF TASK

TASK 32-13-11-420-803

7. Main Landing Gear Door Assembly Installation

(Figure 401)

A. General

(1) This task gives instructions to install the door assembly.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)

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(Continued)

Reference	Title
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES
SWPM 20-20-10	Replacement of Ground Studs and Bonding Jumper Installation

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

D. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00130	Alcohol - Isopropyl	TT-I-735
D00633	Grease - Aircraft General Purpose	BMS3-33
G01043	Cloth - Lint-free	
G02439	Brush - Nylon Bristle	

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
10	Pin	32-13-21-01-180	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-180	LOM 437-447, 450-999
12	Pin	32-13-21-01-180	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-180	LOM 437-447, 450-999
37	Pin	32-13-21-01-203	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-210	LOM 437-447, 450-999
43	Pin	32-13-21-01-203	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-204	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-215	LOM 437-447, 450-999

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(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
43 (cont.)		32-13-21-04-220	LOM 437-447, 450-999

F. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
732	Left Main Landing Gear - Center Door
733	Left Main Landing Gear - Inboard Door
734	Left Main Landing Gear
742	Right Main Landing Gear - Center Door
743	Right Main Landing Gear - Inboard Door
744	Right Main Landing Gear

G. Prepare for the Installation

SUBTASK 32-13-11-480-006

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-11-480-015

(2) Put chocks around the tires of all the landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

H. Main Landing Gear Door Assembly Installation

I **LOM 443-445, 450-452, 457, 461-463 PRE SB 737-52-1170 MODIFICATION**

SUBTASK 32-13-11-400-007

(1) Do these steps to install the door assembly (center door [1] and inner door [2]) (View D and E, Figure 401):

(a) Put the door assembly (center door [1] and inner door [2]) in their position for connection to the shock strut [8] and lower side strut [44].

(b) For the center door [1], bottom aft hinge, install the bolt [17], washer [18], laminated washer [19], barrel nut [47], and retainer [48].

(c) For the center door [1], bottom forward hinge, install the bolt [29], washer [30], laminated washer [31], barrel nut [49], and retainer [50].

LOM 404, 411, 416, 420, 422, 425-431 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-400-008

(2) Do these steps to install the door assembly (center door [1] and inner door [2]) (View H and I, Figure 401):

(a) Put the door assembly (center door [1] and inner door [2]) in their position for connection to the shock strut [8] and lower side strut [44].

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(b) For the center door [1], bottom aft hinge, install the bolt [17], anti-rotation clip assembly [52], washer [18], washers [79], washers [101], washers [109], barrel nut [47], and retainer [48].

(c) For the center door [1], bottom forward hinge, install the bolt [29], washer [30], washer [74], washers [73], washers [76], washers [108], barrel nut [49], and retainer [50].

LOM 433, 434 PRE SB 737-52-1170 GRP 3 FULL CAPTURE

SUBTASK 32-13-11-400-009

(3) Do these steps to install the door assembly (center door [1] and inner door [2]) (View H and I, Figure 401):

(a) Put the door assembly (center door [1] and inner door [2]) in their position for connection to the shock strut [8] and lower side strut [44].

(b) For the center door [1], bottom aft hinge, install the bolt [17], washer [18], washers [79], washer [46], lower plate [100], washers [101], washers [109], barrel nut [47], and retainer [48].

(c) For the center door [1], bottom forward hinge, install the bolt [29], washer [30], washers [73], washer [67], washers [76], washers [108], barrel nut [49], and retainer [50].

LOM 402, 406, 407, 412, 415, 423, 424, 432, 437-442, 446, 447, 453-456, 458-460, 464-999; LOM 404, 411, 416, 420, 422, 425-431, 433, 434, 443-445, 450-452, 457, 461-463 POST SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-400-010

(4) Do these steps to install the door assembly (center door [1] and inner door [2]) (View H and I, Figure 401):

(a) Put the door assembly (center door [1] and inner door [2]) in their position for connection to the shock strut [8] and lower side strut [44].

(b) For the center door [1], bottom aft hinge, install the bolt [17], plate [68], clip [69], washer [18], washers [79], washers [101], washer [110], barrel nut [47], and retainer [48].

NOTE: It is permitted to use the washer stack-up from the removal procedure.

(c) For the center door [1], bottom forward hinge, install the bolt [29], washer [30], washer [73], washers [67], washers [76], barrel nut [49], and retainer [50].

NOTE: It is permitted to use the washer stack-up from the removal procedure.

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SUBTASK 32-13-11-400-011

(5) Continue the door assembly (center door [1] and inner door [2]) installation:

(a) For the center door [1], top aft hinge, install the bolt [4], washer [5], spacers [7], washer [77], and nut [9] to connect the tie rod [3] to the tray assembly [6] on the shock strut [8] (View B, Figure 401).

1) Do not tighten the nut [9].

NOTE: Final torque to the nuts and installation of the cotter pin will be done after final adjustments to the doors are made in the subsequent step.

(b) For the center door [1], top forward hinge, install the bolt [16], washer [15], spacers [14], washer [78], and nut [13] to connect the tie rod [11] to the tray assembly [6] on the shock strut [8] (View C, Figure 401).

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1) Do not tighten the nut [13].

NOTE: Final torque to the nuts and installation of the cotter pin will be done after final adjustments to the doors are made in the subsequent step.

(c) If you need to connect the inner door [2] to the pushrod [45], do these steps (View F and G, Figure 401):

1) Lubricate the shank of the bolt [32] and spacer [34] with grease, D00633.

2) Remove all unwanted grease, D00633.

3) Install the bolt [32], washer [33], spacer [34], washer [35], and nut [36] to hold the inner door [2] to the pushrod [45].

a) Hand tighten the nut [36] until after final adjustments to the doors are made in the subsequent steps.

(d) If you need to connect the pushrod [45] to the lower side strut [44], do these steps (View F and G, Figure 401):

1) Lubricate the shank of the bolt [38] and spacer [40] with grease, D00633.

2) Remove all unwanted grease, D00633.

3) Install the bolt [38], washer [39], spacer [40], washer [41], and nut [42] to connect the pushrod [45] to the lower side strut [44].

a) Hand tighten the nut [42] until after final adjustments to the doors are made in the subsequent steps.

SUBTASK 32-13-11-820-003

(6) Do this task: Main Landing Gear Shock Strut Door Adjustment, TASK 32-13-11-820-801.

(a) It is not necessary to do this task if you can do these steps:

1) Make sure that the inner door [2] and center door [1] are being reinstalled on the same Main Landing Gear (MLG).

2) Make sure that the inner door [2], center door [1], and pushrod [45] that are being installed are the same ones that were removed.

3) Make sure that no adjustment was made on the existing pushrod [45].

4) Make sure that no adjustment was made to the hinges [20], no shims added or removed.

5) Make sure that there is no damage to the lockwires on the pushrod [45].

LOM 404, 411, 416, 420, 422, 425-431 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-420-020

(7) Do these steps to safety the fasteners on the center door [1] (View H and I, Figure 401):

(a) Tighten bolt [17] and bolt [29] to 410 in-lb (46.3 N·m).

NOTE: Bolts can be loosened one quarter turn, if necessary, for installation of the anti-rotation clips. The minimum torque value is 220 in-lb (24.9 N·m).

(b) Adjust the thickness of shim [90] to match washer thickness.

(c) Install the anti-rotation clip [51], bolts [53], washers [54], washers [55], and nuts [56].

(d) Install the anti-rotation upper plate [72], shim [90], spacer [91], bolts [63], washers [64], washers [65], and nuts [66].

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LOM 433, 434 PRE SB 737-52-1170 GRP 3 FULL CAPTURE

SUBTASK 32-13-11-420-021

(8) Do these steps to safety the fasteners on the center door [1] (View H and I, Figure 401):

(a) Tighten the bolt [17] and bolt [29] to 398 in-lb (45.0 N·m) to 422 in-lb (47.7 N·m). Torque bolt to the low torque value. Tighten the bolts to align head with the anti-rotation plates, as necessary.

(b) Adjust the thickness of shim [97] and shim [90] to match washer thickness.

(c) Apply sealant, A00247, as a fay seal between upper and lower anti-rotation plates.

(d) Install the anti-rotation upper plate [95], shim [97], lower plate [100], spacer [89], bolts [96], washers [98], washers [101], washers [109], and nuts [99].

(e) Install the anti-rotation clip [88], shim [90], spacer [91], bolts [84], washers [85], washers [86], and nuts [87].

LOM 402, 406, 407, 412, 415, 423, 424, 432, 437-442, 446, 447, 453-456, 458-460, 464-999; LOM 404, 411, 416, 420, 422, 425-431, 433, 434, 443-445, 450-452, 457, 461-463 POST SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-420-022

(9) Do these steps to safety the fasteners on the center door [1] (View H and I, Figure 401):

(a) Tighten the bolt [17] and bolt [29] to 398 in-lb (45.0 N·m) to 422 in-lb (47.7 N·m). Torque bolt to the low torque value. Tighten the bolts to align head with the anti-rotation plates, if necessary.

(b) Adjust the thickness of shim [90] to match washer thickness.

(c) Install the anti-rotation plate [68], clip [69], bolts [70], washers [71], washer [58], and nut [59].

(d) Install the anti-rotation clip [88], shim [90], spacer [91], bolts [84], washers [85], washers [57], and nuts [87].

LOM 443-445, 450-452, 457, 461-463 PRE SB 737-52-1170 MODIFICATION

SUBTASK 32-13-11-420-012

(10) Tighten the bolt [17] and bolt [29] to between 220 in-lb (25 N·m) – 410 in-lb (46 N·m).

LOM ALL

SUBTASK 32-13-11-420-013

(11) Tighten the nut [9].

(a) Install the cotter pin [10] in the hole in the bolt [4].

(b) If necessary, loosen the nut [9] to the nearest castellation to align the holes for the cotter pin [10] (View B, Figure 401).

SUBTASK 32-13-11-420-014

(12) Tighten the nut [13].

(a) Install the cotter pin [12] in the hole in the bolt [16].

(b) If necessary, loosen the nut [13] to the nearest castellation to align the holes for the cotter pin [12] (View C, Figure 401).

SUBTASK 32-13-11-420-015

(13) Tighten the nut [36].

(a) Install the cotter pin [37] in the hole in the bolt [32].

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(b) If necessary, loosen the nut [36] to the nearest castellation to align the holes for the cotter pin [37] (View F and G, Figure 401).

SUBTASK 32-13-11-420-016

(14) Tighten the nut [42].

(a) Install the cotter pin [43] in the hole in the bolt [38].

(b) If necessary, loosen the nut [42] to the nearest castellation to align the holes for the cotter pin [43] (View F and G, Figure 401).

SUBTASK 32-13-11-420-024

(15) Do these steps to prepare the jumper cable [106] and main landing gear for installation.

(a) Use Cleaning Procedure 5 to prepare the attachment surface for the jumper cable [106] on the main landing gear (SWPM 20-20-00).

1) Use a new lint-free cloth, G01043, or brush, G02439, to apply the alcohol, B00130.

(b) Use Cleaning Procedure 5 to prepare the clamp [105] (surface and tab) and terminal (SWPM 20-20-00).

1) Use a new lint-free cloth, G01043, or brush, G02439, to apply the alcohol, B00130.

SUBTASK 32-13-11-420-026

(16) Install the jumper cable [106], screw [103], washers [104], clamp [105] and nut [107] on the main landing gear (View J and K, Figure 401).

SUBTASK 32-13-11-280-002

(17) Use an intrinsically safe approved bonding meter, COM-1550, to do a bonding check (SWPM 20-20-10).

SUBTASK 32-13-11-390-002

(18) Apply a fillet seal with sealant, A00247, to the jumper cable [106] and fasteners (SWPM 20-20-10).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR SHOCK STRUT DOOR - ADJUSTMENT/TEST

1. **General**
   A. This procedure has these tasks:
      (1) An adjustment of the shock strut door for the MLG.
   B. This task is not necessary if you can do these steps:
      (1) Make sure that the inner door [2] and center door [1] are being reinstalled on the same MLG.
      (2) Make sure that the inner door [2], center door [1], and pushrod [45] that are being installed are the same ones that were removed.
      (3) Make sure that no adjustment was made on the existing pushrod [45].
      (4) Make sure that no adjustment was made to the hinges [20], no shims added or removed.
      (5) Make sure that there is no damage to the lockwires on the pushrod [45].
   C. The assembly of the inner door and the center door is referred to as the "door assembly" in this procedure.

TASK 32-13-11-820-801

2. **Main Landing Gear Shock Strut Door Adjustment**
   (Figure 501, Figure 502)

   A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
29-11-00-860-802	Hydraulic System A or B Pressurization with a Portable Hydraulic Cart (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-21-000-801	Main Landing Gear Wing Door Adjustment (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)

   B. Tools/Equipment

   NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
COM-163	Portable Hydraulic Cart, 3000 PSI, 30 GPM Part #: 5833 Supplier: 59603 Part #: 673A5FCBBCLMNY4 Supplier: 59603 Part #: 9780-0327 Supplier: 05172 Part #: HGPU50-30-1SX Supplier: 0022N Part #: HPU2 Supplier: 0T652 Part #: HPU3.3 Supplier: 0T652 Part #: HPU4 Supplier: 0T652 Part #: HT2000-1-E/1-S Supplier: H6394 Part #: HT2000-1-E/1-S2 Supplier: H6394 Part #: HT2000-1-F-S Supplier: H6394 Part #: HT2000-1-F-S2 Supplier: H6394 Part #: PH50D Supplier: 10000 Part #: PH50E Supplier: 10000 Part #: TMH3000 Supplier: L1238 Opt Part #: 57301FC3BBCILMNY Supplier: 59603 Opt Part #: 57305KV3BBCI-A1 Supplier: 59603

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C. Consumable Materials

Reference	Description	Specification
G00440	Lockwire - MS20995C41, Corrosion Resistant Steel - 0.041 Inch (1.0414 mm) Diameter	NASM20995

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
731	Left Main Landing Gear - Outboard Door
734	Left Main Landing Gear
741	Right Main Landing Gear - Outboard Door
744	Right Main Landing Gear

E. Prepare for the Adjustment

SUBTASK 32-13-11-480-007

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN THE NOSE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE NOSE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-11-860-001

(2) Lift the airplane with jacks until the main landing gear wheels are above the ground and there is enough clearance to retract the main landing gear (TASK 07-11-01-580-815).

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SUBTASK 32-13-11-840-001

> **WARNING**
> MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS AND THE THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) Pressurize the hydraulic system A with a 3000 PSI, 30 GPM portable hydraulic cart, COM-163 (TASK 29-11-00-860-802).

NOTE: Alternatively, the main landing gear can also be extended/retracted with the electric motor driven pump (Main Landing Gear Test - Component Replacement, TASK 32-32-00-710-802).

F. Main Landing Gear Shock Strut Door Adjustment

SUBTASK 32-13-11-860-003

(1) Retract the main landing gear.

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> **WARNING**
> MAKE SURE THAT YOU SECURE THE PLATES ON THE BOTTOM AFT HINGE OF THE CENTER DOOR. THE PLATES CAN MOVE AROUND ITS AXES. IF YOU DO NOT SECURE THE PLATES, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Secure the plates on the center door bottom aft hinge to avoid damage during the main landing gear operation (Figure 502 (Sheet 7)).

LOM ALL

(b) Remove the DO-NOT-OPERATE tag from the control lever for the landing gear.

(c) For the applicable main landing gear for the door you are adjusting, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

> **WARNING**
> MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF THE RETRACTION PATH FOR THE APPLICABLE MAIN LANDING GEAR. INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE AREA IS NOT CLEAR.

(d) Move the control lever for the landing gear to the UP position to retract the main landing gear.

(e) Attach a DO-NOT-OPERATE tag to the control lever for the landing gear.

(f) Close the main landing gear door.

1) To retract the main landing gear, slowly increase the hydraulic pressure that is supplied by 3000 PSI, 30 GPM portable hydraulic cart, COM-163, until the main landing gear is in the up and locked position.

2) Make sure the hydraulic pressure supplied by the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, does not go above 3200 psi (22,063 kPa).

3) With the gear in the up and locked position, decrease the hydraulic pressure supplied by the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, to zero.

SUBTASK 32-13-11-820-004

(2) Calculate the Net Effect Value (NEV) of the center door [1].

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(a) Measure and record the fit or clearance values at each of the measurement locations shown in (Table 501).

NOTE: Record ALL of the fit or clearance values that are measured.

(b) Use the "ALL" tolerances, in (Table 501), for all airplane main landing gear center door clearance and flushness checks.

Table 501/32-13-11-993-804 MAIN LANDING GEAR CENTER DOOR CLEARANCE AND FLUSHNESS VALUES

AIRPLANE EFFECTIVITY	EDGE ZONE	CLEARANCE	FLUSHNESS
ALL	A	0.40 ±0.23 in. (10.16 ±5.84 mm)	+0.03 in. (0.76 mm)/-0.05 in. (-1.27 mm)
ALL	B	0.33 +0.32 / -0.17 in. (8.38 +8.13 / -4.32 mm)	NO ADJUSTMENT NECESSARY
ALL	C	0.40 ±0.23 in. (10.16 ±5.84 mm)	+0.03 in. (0.76 mm)/-0.05 in. (-1.27 mm)
DOOR FLUSHNESS DIAGRAM			
		(NEGATIVE MISFAIR)	A negative tolerance (-) indicates the face of the mismatch faces aft.
		(POSITIVE MISFAIR)	A positive tolerance (+) indicates the face of the mismatch is into the air stream.

(c) Compare the measured fit values to (Table 501).

(d) If all of the measured fit values are within the tolerance limits shown in (Table 501), then the fit interface NEV meets the aerosmoothness requirement, and no NEV calculation is required.

SUBTASK 32-13-11-970-001

(3) If one or more of the measured values at each measurement location in (Figure 501) are more than the tolerances shown in the chart, then, find and convert all of the measured step (misfair) into a NEV.

(a) Calculate the NEV for the interface.

1) Add all of the calculated NEV values, both those in tolerance and those that are not in the tolerance and divide the result by the total number of measurements.

NOTE: The result is the total NEV for the interface.

(b) Check the NEV result against Net Effect Limit (NEL) for the interface given in the chart.

NOTE: This value is usually 1.0. If the NEV for the interface is less than or equal to the NEL, the interface is aerodynamically acceptable.

(c) If the calculated NEV is greater than the NEL, the interface does not meet the aerosmoothness requirements.

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SUBTASK 32-13-11-840-002

(4) If the fit is not in tolerance, do the steps that follow:

(a) Extend the main landing gear.

1) Remove the DO-NOT-OPERATE tag from the control lever for the landing gear.

2) Operate the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, to supply hydraulic pressure to the main landing gear.

> **WARNING** MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF THE RETRACTION PATH FOR THE APPLICABLE MAIN LANDING GEAR. INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE AREA IS NOT CLEAR.

3) Move the control lever for the landing gear to the DOWN position to extend the main landing gear.

4) Attach a DO-NOT-OPERATE tag to the control lever for the landing gear.

5) Adjust the hydraulic pressure supplied by the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, to zero.

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

6) Install the downlock pins on all the landing gears (TASK 32-00-01-480-801).

SUBTASK 32-13-11-820-005

(5) Adjust the center door [1].

NOTE: A change in the adjustment of the center door can have an effect on the adjustment of the wing door.

(a) Adjust the tie rod [3].

1) Remove the lockwire and loosen the jamnuts [108] at either end of the tie rod [3].

2) Turn the tie rod [3] in either direction until the fit is in tolerance.

3) Tighten the washers [109] and jamnuts [108].

4) Install the lockwires.

(b) Adjust the tie rod [11].

1) Remove the lockwire and loosen the jamnut [110] at either end of the tie rod [11].

2) Turn the tie rod [11] in either direction until the fit is in tolerance.

3) Tighten the washer [111] and jamnut [110].

4) Install the lockwires.

(c) Adjust the door at the bottom hinge line by adjusting the washer stackup at the two mounting points.

(d) Maintain the total number of washers in the stack-up, regardless of location, to prevent bolt from bottoming out in the housing.

(e) Tighten the bolts, after the washers have been adjusted for fair.

(f) Do a check of the wing door (TASK 32-13-21-000-801).

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SUBTASK 32-13-11-220-001

(6) Make sure that the center door [1] is still in tolerance (Table 501).

SUBTASK 32-13-11-820-006

(7) Measure and record the fit or clearance values for the inner door [2] at each of the measurement locations shown in (Table 502).

NOTE: Write the fit values that are not in tolerance.

(a) Use the "ALL" tolerances in (Table 502), for all airplane main landing gear inner door clearance and flushness checks.

NOTE: After the inboard door rigging has been completed, and with the door in the stowed position, the leading and trailing edges of the exterior surface of the inboard Main Landing Gear Door zones D and E inboard, should lie inside the exterior surface of the Wing to Body Fairing unless noted otherwise in Table 502.

Table 502/32-13-11-993-805 MAIN LANDING GEAR INNER DOOR CLEARANCE AND FLUSHNESS VALUES

AIRPLANE EFFECTIVITY	EDGE ZONE	CLEARANCE	FLUSHNESS
ALL	D(1)	0.40 ±0.12 in. (10.16 ±3.05 mm) (For All of Edge Zone D)	-0.1309 ±0.0500 in. (-3.32 ±1.27 mm)
ALL	D(2)	0.40 ±0.12 in. (10.16 ±3.05 mm) (For All of Edge Zone D)	-0.1552 ±0.0500 in. (-3.94 ±1.27 mm)
ALL	E(1)	0.40 ±0.12 in. (10.16 ±3.05 mm) (For All of Edge Zone E)	-0.2418 ±0.0500 in. (-6.14 ±1.27 mm)
ALL	E(2)	0.40 ±0.12 in. (10.16 ±3.05 mm) (For All of Edge Zone E)	-0.2794 ±0.0500 in. (-7.10 ±1.27 mm)
ALL	F	0.60 ±0.08 in. (15.24 ±2.03 mm)	NO ADJUSTMENT NECESSARY
DOOR FLUSHNESS DIAGRAM			
- ------> Air Stream (V)		(NEGATIVE MISFAIR)	A negative tolerance (-) indicates the face of the mismatch faces aft.
+ ------> Air Stream (V)		(POSITIVE MISFAIR)	A positive tolerance (+) indicates the face of the mismatch is into the air stream.

SUBTASK 32-13-11-840-003

CAUTION ONLY EXTEND THE MAIN GEAR, IF THE CENTER DOOR IS ADJUSTED ZERO TO POSITIVE. NEGATIVE ADJUSTMENT CAN CAUSE THE OUTER DOOR TO HIT THE CENTER DOOR. DAMAGE CAN OCCUR TO THE TWO DOORS.

(8) If the fit is not in tolerance, do the steps that follow:

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(a) Extend the main landing gear.

1) Remove the DO-NOT-OPERATE tag from the control lever for the landing gear.

2) Operate the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, to supply hydraulic pressure to the main landing gear.

> **WARNING** MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF THE RETRACTION PATH FOR THE APPLICABLE MAIN LANDING GEAR. INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE AREA IS NOT CLEAR.

3) Move the control lever for the landing gear to the DOWN position to extend the main landing gear.

4) Attach a DO-NOT-OPERATE tag to the control lever for the landing gear.

5) Adjust the hydraulic pressure supplied by the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, to zero.

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

6) Install the downlock pins on all the landing gears (TASK 32-00-01-480-801).

SUBTASK 32-13-11-820-007

(9) Adjust the pushrod [45] (Figure 502).

(a) Loosen the jamnuts [114] on the pushrod [45] at either end and turn the rod on either direction.

(b) After the final adjustment of the pushrod [45], insert a 0.050 pin or wire into the inspection hole.

(c) Make sure the wire stopped by the rod end for adjustment to be acceptable.

(d) Tighten the washers [115] and jamnuts [114].

(e) Install the MS20995C41 lockwire, G00440.

SUBTASK 32-13-11-220-002

(10) Make sure that the inner door [2] is still in tolerance (Table 502).

SUBTASK 32-13-11-820-008

(11) If it is necessary, adjust the push rods until the fit tolerances meet the tolerances (Table 501) (Table 502).

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-13-11-840-004

(1) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-13-11-580-001

(2) To lower the airplane and remove the jacks, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ZONE IDENTIFICATION

A

ZONE A
(ALL OTHER ZONES ARE EQUIVALENT)

A-A

1 A POSITIVE TOLERANCE (+) INDICATES THE FACE OF THE MISMATCH IS FORWARD (INTO THE AIRSTREAM). A NEGATIVE TOLERANCE (-) INDICATES THE FACE OF THE MISMATCH FACES AFT.

G27725 S0006574940_V2

Main Landing Gear Shock Strut Doors Fit Tolerances
Figure 501/32-13-11-990-802 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DIMENSIONS

A

NOTE:

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS ARE IN PARENTHESES). THESE MEASUREMENTS LOCATIONS ARE FOR STEP/MISFAIR BETWEEN THE DOOR AND THE PANEL.

1 THE DIMENSIONAL TOLERANCE IS ±0.5000 INCH (12.7 mm).

2 NEV CALCULATIONS ARE NOT REQUIRED.

G33284 S0006574941_V4

Main Landing Gear Shock Strut Doors Fit Tolerances
Figure 501/32-13-11-990-802 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

ALL DIMENSIONS ARE IN INCHES (MILLIMETER ARE IN PARENTHESES). THESE MEASUREMENT LOCATIONS ARE FOR STEP/MISFAIR BETWEEN THE DOOR AND THE PANEL.

1 THE DIMENSIONAL TOLERANCE IS ±0.5000 INCH (12.7 mm).

G51469 S0006574942_V2

Main Landing Gear Shock Strut Doors Fit Tolerances
Figure 501/32-13-11-990-802 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WING DOOR NET EFFECT VALUE CHART

(EXAMPLE OF NEV CALCULATION)
<FLUSHNESS> (POINT A: -0.03 INCH, POINT B: 0.04 INCH, POINT C: -0.04 INCH, POINT D: 0.01 INCH)
(NEV'A' + NEV'B' + NEV'C' + NEV'D')/4 = (0.55 + 1.5 + 0.8 + 0.13)/4 = 0.745 < 1.0 (WITHIN LIMIT)

NOTE:

THE NET EFFECT LIMIT (N.E.L.) FOR THIS ITEM IS 1.0.

IF ALL MEASURED STEP VALUES FOR THIS ITEM ARE BETWEEN
-0.05 INCH (-1.27 mm) AND +O.03 INCH (+0.762 mm) THEN PASSAGE
OF N.E.L. IS ASSURED AND AN ACTUAL N.E.L. CALCULATION IS NOT REQUIRED.

G56904 S0006574943_V4

Main Landing Gear Shock Strut Doors Fit Tolerances
Figure 501/32-13-11-990-802 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 1 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR TOP AFT HINGE

B

CENTER DOOR TOP FORWARD HINGE

C

G28085 S0006574945_V3

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 2 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

D

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

E

G28121 S0006574946_V4

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 3 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

D

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

E

2367969 S0000542218_V3

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 4 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

G

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

H

1 ADJUST SHIM THICKNESS TO MATCH WASHERS
2 USE 0 - 3 WASHERS TO GET CORRECT FIT/CLEARANCE
3 USE 0 - 4 WASHERS TO GET CORRECT FIT/CLEARANCE

2367997 S0000542219_V4

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 5 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

D

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

E

2368012 S0000542224_V3

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 6 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

G

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

H

1 ADJUST SHIM THICKNESS TO MATCH WASHERS
2 USE 0 - 3 WASHERS TO GET CORRECT FIT/CLEARANCE
3 USE 0 - 4 WASHERS TO GET CORRECT FIT/CLEARANCE

2368043 S0000542226_V4

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 7 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

2368058 S0000542221_V3

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 8 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER DOOR BOTTOM AFT HINGE CONNECTION

G

CENTER DOOR BOTTOM FORWARD HINGE CONNECTION

H

1 ADJUST SHIM THICKNESS TO MATCH WASHERS

2 MAINTAIN A TOTAL NUMBER OF SEVEN WASHERS IN THE STACK UP

2368059 S0000542227_V5

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 9 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INNER DOOR PUSHROD

F

G28078 S0006574947_V3

Main Landing Gear Shock Strut Doors Adjustment
Figure 502/32-13-11-990-803 (Sheet 10 of 10)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WING DOOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the outer door for the main landing gear

(2) An installation of the outer door for the main landing gear.

B. The wing door is referred to as the "outer door assy" in this procedure.

TASK 32-13-21-000-802

2. Main Landing Gear Wing Door Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
G50079	Scraper - Wood or Plastic	

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
731	Left Main Landing Gear - Outboard Door
734	Left Main Landing Gear
741	Right Main Landing Gear - Outboard Door
744	Right Main Landing Gear

D. Access Panels

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

E. Prepare for the Removal

SUBTASK 32-13-21-480-002

> **WARNING**
> MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-21-480-003

(2) Put chocks around the tires of all the landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-13-21-010-001

(3) For the left main landing gear, do this step:

Open this access panel:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

SUBTASK 32-13-21-010-002

(4) For the right main landing gear, do this step:

Open this access panel:

Number	Name/Location
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

F. Main Landing Gear Wing Door Removal

SUBTASK 32-13-21-020-001

(1) Disconnect the outer door [16], do these steps:

(a) Examine the condition of the pushrod [3] for wear.

(b) If it is necessary to replace the pushrod [3], do these steps:

1) Remove the cotter pin [5], nut [4], and washer [6] from the bolt [9].

2) Remove the bolt [9], washer [8], and bushing [7] to disconnect the pushrod [3] from the door actuator bracket [10].

3) Remove the washer [8] from the bolt [9].

(c) If you do not need to replace the pushrod [3], do these steps:

1) Remove the cotter pin [13], nut [12], and washer [11] from the bolt [2].

2) Remove the bolt [2] and washer [1] to disconnect the forward hinge [14] from the pushrod [3].

3) Remove the washer [1] from the bolt [2].

SUBTASK 32-13-21-020-002

(2) To disconnect the outer door [16] from the hinge fitting [19] and bolt [22], do these steps:

(a) Remove the nut [33], washer [31], and bolt [30] to disconnect the jumper cable [32] from the stabilizer link assembly.

1) Use scraper, G50079, to remove sealant from the end of the bonding jumper.

(b) Remove the cotter pin [15], nut [17], and washer [18] from the bolt [22].

(c) Remove the bolt [22], washer [21], and bushing [20] to disconnect the forward hinge [14] from the hinge fitting [19].

(d) Remove the washer [21] from the bolt [22].

(e) Remove the cotter pin [29], nut [28], and washer [27] from the bolt [25].

(f) Remove the bolt [25] and washer [24] to disconnect the aft hinge [26] from the hinge fitting [23].

(g) Remove the washer [24] from the bolt [25].

(h) Remove the outer door [16] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Wing Door Installation
Figure 401/32-13-21-990-804 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

F84250 S0006574969_V3

Main Landing Gear Wing Door Installation
Figure 401/32-13-21-990-804 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F84257 S0006574970_V4

Main Landing Gear Wing Door Installation
Figure 401/32-13-21-990-804 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-13-21-420-801

3. Main Landing Gear Wing Door Installation

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-21-000-801	Main Landing Gear Wing Door Adjustment (P/B 501)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-614	Bonding Meters - Non-Intrinsically Safe (For use in outside Class I, Divisions I & II non-hazardous locations. For hazardous locations, use COM-1550). Part #: 247000 Supplier: 00426 Part #: 620LK Supplier: 1CRL2 Part #: BLR-0003-XX Supplier: KC432 Part #: BT51 Supplier: 00426 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659 Opt Part #: 247001 Supplier: 00426

C. Consumable Materials

Reference	Description	Specification
A50231	Sealant - Pressure And Environmental - Chromate Type	BMS5-95 Class B
A50337	Sealant - Fuel Tank	BMS5-45 Class B
A50359	Sealant - Low Density, Non-Chromate Type	BMS5-142 Type II Class B
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
C00700	Coating - Protective Enamel (BAC 707 Gray Color, Gloss)	BMS10-60 Type I
C50413	Coating - Chemical And Solvent Resistant Finish - (BAC 452 Green)	BMS 10-11 Type I Class A
D00633	Grease - Aircraft General Purpose	BMS3-33
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	AMS3819 Class 1 Grade A or B Form 1 (Supersede BMS15-5 CL A)
G51464	Abrasive - Aluminum Oxide paper, 60 grit or finer	

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
16	Outer door	32-13-21-01-380	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-385	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-390	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-645	LOM 437-447, 450-999

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
731	Left Main Landing Gear - Outboard Door
734	Left Main Landing Gear
741	Right Main Landing Gear - Outboard Door
744	Right Main Landing Gear

F. Access Panels

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

G. Prepare for the Installation

SUBTASK 32-13-21-480-004

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

H. Main Landing Gear Wing Door Installation

SUBTASK 32-13-21-420-001

(1) Connect the outer door [16] to the hinge fitting [23] and hinge fitting [19]:
   (a) Put the outer door [16] in its position in the hinge fitting [23] and hinge fitting [19].
   (b) Install the washer [24] on the bolt [25].
   (c) Align the hole in the aft hinge [26] to the hole in the hinge fitting [23].
   (d) Put the bolt [25] through the aft hinge [26] and hinge fitting [23].
   (e) Install the washer [27] and nut [28] on the bolt [25].
   (f) Install the washer [21] on the bolt [22].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(g) Align the hole in the forward hinge [14] to the hole in the hinge fitting [19].

(h) Put the bolt [22] through the forward hinge [14] and hinge fitting [19].

(i) Install the washer [18] and nut [17] on the bolt [22].

(j) Hand tighten the nut [28] and nut [17] until final adjustment to the outer door [16] is made in the subsequent step.

1) Install the cotter pin [29] and cotter pin [15] in the bolt [25] and bolt [22].

SUBTASK 32-13-21-420-002

(2) Connect the outer door [16].

(a) If you need to connect the outer door [16] to the pushrod [3], do these steps:

1) Put the outer door [16] in its position for connection to the pushrod [3].

2) Install the washer [1] on the bolt [2].

3) Align the hole in the forward hinge [14] to the hole in the pushrod [3].

4) Apply grease, D00633, to the shank of the bolt [2].

5) Put the bolt [2] through the forward hinge [14] and pushrod [3].

6) Install the washer [11] and nut [12] on the bolt [2].

7) Hand tighten the nut [12] until final adjustment to the outer door [16] is made in the subsequent step.

a) Install the cotter pin [13] in the bolt [2].

(b) If you need to connect the pushrod [3] to the door actuator bracket [10], do these steps:

1) Put the pushrod [3] in its position for connection to the door actuator bracket [10].

2) Install the washer [8] on the bolt [9].

3) Align the hole in the pushrod [3] to the hole in the door actuator bracket [10].

4) Apply grease, D00633, to the shank of the bolt [9].

5) Put the bushing [7] through the door actuator bracket [10] and pushrod [3].

6) Put the bolt [9] through the door actuator bracket [10] and pushrod [3].

7) Install the washer [6] and nut [4] on the bolt [9].

8) Hand tighten the nut [4] until final adjustment to the outer door [16] is made in the subsequent step.

a) After final adjustment to the outer door [16] and final torque to the nut [4] is applied, install the cotter pin [5] in the bolt [9].

(c) Install the bolt [30], washers [31], and nut [33] to connect the jumper cable [32] to the stabilizer link assembly.

1) Make sure that there is one washer [31] under the jumper cable [32] and one washer [31] under the nut [33] when you connect the jumper cable [32] to the stabilizer link assembly.

2) Prepare the bolt [30], washers [31], terminal of the jumper cable [32], nut [33], and the inboard surface for a fillet sealed.

a) Use abrasive cleaning procedure to prepare the attachment surface (SWPM 20-20-00).

<1> Clean the mating surface of the stabilizer link assembly with 60 grit wet/dry aluminum oxide sandpaper, G51464.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

b) Use cotton wiper, G00034, moist in solvent, B00184, to clean the mating surfaces of the bolt [30], washers [31], nut [33], and jumper cable [32].

3) Do the following steps to install the jumper cable [32]:

NOTE: Do not feed jumper through any wires, tubes or structure such that any of these would be trapped within the loop formed by the installation.

a) Install the bolt [30], washers [31], nut [33], and jumper cable [32].

<1> Torque the nut [33] to 32 in-lb (3.6 N·m) - 38 in-lb (4.3 N·m).

b) Do a check of the electrical bonding resistance between the stabilizer link assembly and terminal of the jumper cable [32].

<1> Use an non-intrinsically safe bonding meter, COM-614.

<2> Make sure that the bonding resistance is 0.001 ohm (1.0 milliohm) or less.

c) Apply sealant, A50359, or sealant, A50231, or sealant, A50337, to the threads of the bolt [30], nut [33], and mating surface of the jumper cable [32] (SWPM 20-20-00).

<1> Make sure that the sealant is continuous around the bolt [30], washers [31], nut [33], and jumper cable [32].

<a> Remove excess sealant from the bolt [30] head, if it's necessary.

d) Refinish area not covered by ground stud or sealant by coating, C00064, coating, C50413, and coating, C00700.

SUBTASK 32-13-21-820-005

(3) Do this task: Main Landing Gear Wing Door Adjustment, TASK 32-13-21-000-801.

SUBTASK 32-13-21-420-003

(4) Tighten the nut [4].

(a) Install the cotter pin [5] in the hole in the bolt [9].

(b) If it is necessary, loosen the nut [4] to the nearest castellation to align the hole for the cotter pin [5].

SUBTASK 32-13-21-420-004

(5) Tighten the nut [12].

(a) Install the cotter pin [13] in the hole in the bolt [2].

(b) If it is necessary, loosen the nut [12] to the nearest castellation to align the hole for the cotter pin [13].

SUBTASK 32-13-21-420-005

(6) Tighten the nut [17].

(a) Install the cotter pin [15] in the hole in the bolt [22].

(b) If it is necessary, loosen the nut [17] to the nearest castellation to align the hole for the cotter pin [15].

SUBTASK 32-13-21-420-006

(7) Tighten the nut [28].

(a) Install the cotter pin [29] in the hole in the bolt [25].

(b) If it is necessary, loosen the nut [28] to the nearest castellation to align the hole for the cotter pin [29].

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I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-13-21-410-001

(1) For the left main landing gear, do this step:

Close this access panel:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

SUBTASK 32-13-21-410-002

(2) For the right main landing gear, do this step:

Close this access panel:

Number	Name/Location
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WING DOOR - ADJUSTMENT/TEST

1. General
   A. This procedure has this task:
      (1) An adjustment of the wing door for the main landing gear.

TASK 32-13-21-000-801

2. Main Landing Gear Wing Door Adjustment
(Figure 501, Figure 502)

A. General

(1) This task is not necessary if:

(a) The same wing door that is removed is re-installed without modifications.

(b) The door attachment rod-end or hinge fittings were not disturbed during the wing door removal/installation procedures.

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
29-11-00-860-802	Hydraulic System A or B Pressurization with a Portable Hydraulic Cart (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-11-820-801	Main Landing Gear Shock Strut Door Adjustment (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-163	Portable Hydraulic Cart, 3000 PSI, 30 GPM Part #: 5833 Supplier: 59603 Part #: 673A5FCBBCLMNY4 Supplier: 59603 Part #: 9780-0327 Supplier: 05172 Part #: HGPU50-30-1SX Supplier: 0022N Part #: HPU2 Supplier: 0T652 Part #: HPU3.3 Supplier: 0T652 Part #: HPU4 Supplier: 0T652 Part #: HT2000-1-E/1-S Supplier: H6394 Part #: HT2000-1-E/1-S2 Supplier: H6394 Part #: HT2000-1-F-S Supplier: H6394 Part #: HT2000-1-F-S2 Supplier: H6394 Part #: PH50D Supplier: 10000 Part #: PH50E Supplier: 10000 Part #: TMH3000 Supplier: L1238 Opt Part #: 57301FC3BBCILMNY Supplier: 59603 Opt Part #: 57305KV3BBCI-A1 Supplier: 59603

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
STD-858	Tag - DO NOT OPERATE

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
27	Pin	32-13-21-01-070	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-01-119	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-075	LOM 437-447, 450-999
39	Pin	57-15-00-04-010	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
731	Left Main Landing Gear - Outboard Door
734	Left Main Landing Gear
741	Right Main Landing Gear - Outboard Door
744	Right Main Landing Gear

F. Prepare for the Adjustment

SUBTASK 32-13-21-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-13-21-860-001

(2) Lift the airplane with jacks until the main landing gear wheels are above the ground and there is enough clearance to retract the main landing gear, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-13-21-840-001

> **WARNING** KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER, AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) Pressurize the hydraulic system A with a 3000 PSI, 30 GPM portable hydraulic cart, COM-163, do this task: Hydraulic System A or B Pressurization with a Portable Hydraulic Cart, TASK 29-11-00-860-802.

NOTE: Alternatively, the main landing gear can also be extended/retracted with the electric motor driven pump (TASK 32-32-00-710-802).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-13-21-080-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Remove the downlock pin from the main landing gear for the door that is to be adjusted (TASK 32-00-01-080-801).

G. Main Landing Gear Wing Door Adjustment

SUBTASK 32-13-21-860-003

(1) Do the steps that follow to retract the main landing gear:

(a) Remove the DO NOT OPERATE tag from the control lever for the landing gear.

(b) For the applicable main landing gear for the door you are adjusting, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

> **WARNING** MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF THE RETRACTION PATH FOR THE APPLICABLE MAIN LANDING GEAR. INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE AREA IS NOT CLEAR.

(c) Move the control lever for the landing gear to the UP position to retract the main landing gear.

(d) Attach a DO NOT OPERATE tag, STD-858, to the control lever for the landing gear.

(e) Do the steps that follow to close the main landing gear wing door:

1) To retract the main landing gear, slowly increase the hydraulic pressure that is supplied by 3000 PSI, 30 GPM portable hydraulic cart, COM-163, until the main landing gear is in the up and locked position.

2) Make sure that the hydraulic pressure supplied by the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, does not go above 3200 psi (22,063 kPa).

3) With the gear in the up and locked position, adjust the hydraulic pressure supplied by the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, to zero.

SUBTASK 32-13-21-820-001

(2) Make sure that the fit of the wing door [28] is in tolerance (Table 501).

NOTE: Write the fit values that are not in tolerance.

(a) For all airplane main landing gear wing door clearance and flushness checks, use the "ALL" tolerances (Table 501).

Table 501/32-13-21-993-803 MAIN LANDING GEAR WING DOOR CLEARANCE AND FLUSHNESS VALUES

AIRPLANE EFFECTIVITY	EDGE ZONE	CLEARANCE	FLUSHNESS
ALL	A	.3400 +.1200/-.1200 inch 8.63 +3.05/-3.05 mm	
ALL	B	.4000 +.2300/-.2300 inch 10.16 +5.84/-5.84 mm	+0.03/-0.05 inch +0.76/-1.27 mm (NEL=1.0)

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Table 501/32-13-21-993-803 MAIN LANDING GEAR WING DOOR CLEARANCE AND FLUSHNESS VALUES (Continued)

AIRPLANE EFFECTIVITY	EDGE ZONE	CLEARANCE	FLUSHNESS
ALL	C	.3300 +.3200/-.1700 inch 8.38 +8.13/-4.32 mm	
ALL	D	.400 +.2300/-.2300 inch 10.16 +5.84/ -5.84 mm	+0.03/-0.05 inch +0.76/-1.27 mm (NEL=1.0)
DOOR FLUSHNESS DIAGRAM			
-			+
(NEGATIVE MISFAIR) ------> V A negative tolerance (-) indicates the face of the mismatch faces aft.			(POSITIVE MISFAIR) ------> V A positive tolerance (+) indicates the face of the mismatch is into the air stream.

(b) Compare the fit values that are not in tolerance with the net effect value (NEV) chart (Figure 501).

SUBTASK 32-13-21-840-002

(3) If the fit is not in tolerance, do the steps that follow:

(a) Extend the main landing gear:

1) Remove the DO NOT OPERATE tag from the control lever for the landing gear.

2) Operate the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, to supply hydraulic pressure to the main landing gear.

> **WARNING** MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF THE RETRACTION PATH FOR THE APPLICABLE MAIN LANDING GEAR. INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE AREA IS NOT CLEAR.

3) Move the control lever for the landing gear to the DOWN position to extend the main landing gear.

4) Attach a DO NOT OPERATE tag, STD-858, to the control lever for the landing gear.

5) For the applicable main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

6) Adjust the hydraulic pressure supplied by the 3000 PSI, 30 GPM portable hydraulic cart, COM-163, to zero.

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

7) Install the downlock pins on the main landing gear (TASK 32-00-01-480-801).

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SUBTASK 32-13-21-820-002

(4) Adjust the eyebolts of the hinge fittings [34] (Figure 502):

NOTE: A change in the adjustment of the outer door can have an effect on the adjustment of the shock strut doors.

(a) If it is necessary, do a check on the adjustment of the shock strut doors (TASK 32-13-11-820-801).

(b) Remove the pins [27], nuts [26], washers [25], washers [24], bushing [23], and bolts [22] to disconnect the wing door [28] from the lower stabilizer link [35].

(c) Remove the pins [39], washers [38], washers [37], and nuts [36] from the hinge fittings [34].

(d) Remove the washers [32] located on the shank of the eyebolt from the inboard side, under the lug, of the lower stabilizing beam to the outboard side, under the nut [36].

(e) Install the washers [37], washers [38], and nuts [36] to the hinge fittings [34].

1) Tighten the nuts [36] to 700 in-lb (79.1 N·m).

2) Increase torque until first slot in the nuts [36] align with the hinge bolts [22].

3) Make sure that the torque is 920 in-lb (103.9 N·m) or less.

4) Install the new pin [39].

(f) Install the bushing [23], bolts [22], washers [24], washers [25], and nuts [26] to connect the wing door [28] to the lower stabilizer link [35].

1) Install the new pin [27].

SUBTASK 32-13-21-220-001

(5) Make sure that the wing door [28] is still in tolerance (Table 501).

SUBTASK 32-13-21-970-001

(6) If one or more of the measured values are more than the tolerances, convert the measured step (misfair) into a net effect value (NEV) shown in chart (Figure 501).

(a) Find the NEV for the interface.

1) Add all of the calculated NEVs, both those in tolerance and those that are not in the tolerance and divide the result by the total number of measurements.

NOTE: The result is the NEV for the interface.

(b) Check the NEV result against net effect limit (NEL) for the interface given in the chart (Figure 501).

NOTE: This value is usually 1.0. If the NEV for the interface is less than or equal to the NEL, the interface is aerodynamically acceptable.

(c) If the calculated NEV is more than the NEL, the interface does not meet the aerosmoothness requirements, do the steps below:

1) Adjust the length of the pushrod [29] (Figure 502).

a) Loosen the jamnut [30] on the pushrod [29] at either end and turn the rod on either direction.

NOTE: If the rod is retracted, the door will become higher than the surface of the wing (the door will be out from the lower wing surface). If the rod is extended, the door will become lower than the surface of the wing (the door will be pulled into lower wing surface).

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b) After the final adjustment of the pushrod [29], insert a 0.050 pin or wire into the inspection hole.

c) Make sure that the wire that you insert into the inspection hole touches and is stopped by the rod end.

NOTE: The wire must be stopped by the rod end for the adjustment to be acceptable.

d) Tighten the jamnuts [30] and washers [31].

e) Install the lockwire.

(d) Make sure that the wing door [28] is still in tolerance (Table 501).

1) If it is necessary, re-adjust the pushrod [29] or the eyebolts of the hinge fittings [34].

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-13-21-840-003

(1) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-13-21-580-001

(2) To lower the airplane and remove the jacks, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

——— END OF TASK ———

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ZONE IDENTIFICATION

A

ZONE B
(ALL OTHER ZONES ARE EQUIVALENT)

A-A

1 A POSITIVE TOLERANCE (+) INDICATES THE FACE OF THE MISMATCH IS FORWARD (INTO THE AIRSTREAM). A NEGATIVE TOLERANCE (-) INDICATES THE FACE OF THE MISMATCH FACES AFT.

G29424 S0006574975_V2

Main Landing Gear Wing Door Fit Tolerances
Figure 501/32-13-21-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WING DOOR DIMENSIONAL TOLERANCES

A

NOTE:

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS ARE IN PARENTHESES).

1 THE DIMENSIONAL TOLERANCE IS ±0.5000 INCH (12.7 mm).

2 KEY MISFAIR INSPECTION POINTS.

G29668 S0006574976_V4

Main Landing Gear Wing Door Fit Tolerances
Figure 501/32-13-21-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WING DOOR NET EFFECT VALUE CHART

(EXAMPLE OF NEV CALCULATION)
<FLUSHNESS> (POINT A: -0.03 INCH, POINT B: 0.04 INCH, POINT C: -0.04 INCH, POINT D: 0.01 INCH)
(NEV'A' + NEV'B' + NEV'C' + NEV'D')/4 = (0.55 + 1.5 + 0.8 + 0.13)/4 = 0.745 < 1.0 (WITHIN LIMIT)

NOTE:

THE NET EFFECT LIMIT (N.E.L.) FOR THIS ITEM IS 1.0.
IF ALL MEASURED STEP VALUES FOR THIS ITEM ARE BETWEEN
-0.05 (1.27 mm) AND +O.03 (0.762 mm) THEN PASSAGE OF N.E.L.
IS ASSURED AND AN ACTUAL N.E.L. CALCULATION IS NOT REQUIRED.

G54570 S0006574977_V3

Main Landing Gear Wing Door Fit Tolerances
Figure 501/32-13-21-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G28079 S0006574978_V2

Main Landing Gear Wing Door Adjustment
Figure 502/32-13-21-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR CHARGING VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Nose Landing Gear Gas Charging Valve Removal.

(2) Nose Landing Gear Gas Charging Valve Installation.

(3) Nose Landing Gear Oil Charging Valve Removal.

(4) Nose Landing Gear Oil Charging Valve Installation.

B. The gas charging valve is on the top of the shock strut of the nose landing gear. The gas charging valve is on the center of the top of the shock strut.

C. The oil charging valve is on the aft side of the shock strut on the nose landing gear. The oil charging valve is in the center near the bottom of the shock strut.

TASK 32-21-00-000-802

2. Nose Landing Gear Gas Charging Valve - Removal

(Figure 201)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01 P/B 201	LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES

B. Location Zones

Zone	Area
713	Nose Landing Gear

C. Prepare for the Removal

SUBTASK 32-21-00-860-011

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear (LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES, PAGEBLOCK 32-00-01/201).

SUBTASK 32-21-00-860-012

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-21-00-860-013

(3) Make sure that there is no pressure in the hydraulic systems A and B. Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Nose Landing Gear Gas Charging Valve Removal

SUBTASK 32-21-00-630-001

> **WARNING** DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(1) Deflate the shock strut [1] for the nose landing gear fully:

(a) Remove the lockwire [6] from the gas charging valve [4] and the shock strut [1].

1) Discard the lockwire [6].

(b) Remove the dust cap [2] for the gas charging valve [4].

(c) Loosen the swivel nut [3] of the gas charging valve [4] for a maximum of two turns.

NOTE: Fluid in the shock strut [1] will have bubbles when you release the pressure. Deflate the shock strut [1] slowly to prevent the leakage of the fluid through the gas charging valve [4].

(d) Loosen the swivel nut [3] of the gas charging valve [4] fully when all of the pressure in the shock strut [1] is released.

SUBTASK 32-21-00-020-018

(2) Remove the gas charging valve [4].

(a) Remove the packing [5] from the gas charging valve [4].

(b) Discard the packing [5].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Landing Gear Gas Charging Valve
Figure 201/32-21-00-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-00-400-802

3. Nose Landing Gear Gas Charging Valve - Installation

(Figure 201)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-15-41-610-801	Nose Landing Gear Shock Strut Fluid Check (P/B 301)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
24-22-00-860-814	Remove External Power (P/B 201)
32-00-01 P/B 201	LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES

B. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32 Type I
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Packing	32-21-00-01A-363	LOM ALL

D. Location Zones

Zone	Area
713	Nose Landing Gear

E. Prepare for the Installation

SUBTASK 32-21-00-860-014

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear (LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES, PAGEBLOCK 32-00-01/201).

SUBTASK 32-21-00-860-015

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

F. Nose Landing Gear Gas Charging Valve Installation

SUBTASK 32-21-00-600-001

(1) To install the new packing [5] on the gas charging valve [4] do these steps.

(a) Lubricate the new packing [5] with fluid, D00467 or fluid, D50022.

(b) Lubricate the surface of the gas charging valve [4] which the packing slides against with fluid, D00467 or fluid, D50022.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Install the new packing [5] on the gas charging valve [4].

SUBTASK 32-21-00-600-002

(2) Lubricate the threads of the gas charging valve [4] with the fluid for the shock strut [1]. Refer to Nose Landing Gear Shock Strut Fluid Check, TASK 12-15-41-610-801 for the fluid.

SUBTASK 32-21-00-420-013

(3) Install the gas charging valve [4] on the shock strut [1].

NOTE: The dust cap [2] and the swivel nut [3] of the gas charging valve [4] are installed when the shock strut [1] is serviced.

(a) Tighten the body of the gas charging valve [4] to 11 ft-lb (15 N·m)-13 ft-lb (18 N·m).

(b) Install MS20995C32 lockwire, G01048 on the gas charging valve [4] and the shock strut [1] using the double twist method.

(c) Apply compound, A00226 on the gas charging valve [4] and the shock strut [1].

NOTE: Apply it to make sure the seal made by the compound, A00226, will break if the body of the gas charging valve [4] is loosened.

SUBTASK 32-21-00-610-004

(4) Service the shock strut [1]. Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-00-860-017

(1) If electrical power is not necessary, do this task: Remove External Power, TASK 24-22-00-860-814.

END OF TASK

TASK 32-21-00-000-803

4. Nose Landing Gear Oil Charging Valve Removal

(Figure 202)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)
STD-1140	Hose - Flexible, 1/2 Inch ID, BMS 3-11 Resistant, 10 Foot

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Location Zones

Zone	Area
713	Nose Landing Gear

D. Prepare for the Removal

SUBTASK 32-21-00-800-001

> **CAUTION** DO NOT DEFLATE OR SERVICE THE SHOCK STRUTS WHILE THE TAIL STAND IS INSTALLED. IF YOU DEFLATE OR SERVICE THE SHOCK STRUTS, THE LOAD ON THE TAIL STAND CAN BE TOO LARGE. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

(1) Do not deflate the shock strut while the stand is installed.

SUBTASK 32-21-00-480-012

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-00-860-018

(3) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-21-00-860-019

(4) Make sure that there is no pressure in hydraulic systems A and B. Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

E. Nose Landing Gear Oil Charging Valve Removal

SUBTASK 32-21-00-020-019

> **WARNING** CLEAR THE AREA BELOW THE NOSE BEFORE YOU DEFLATE THE SHOCK STRUT. IF YOU DEFLATE SHOCK STRUT, THE NOSE CAN MOVE DOWN AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Deflate the shock strut [1] for the nose landing gear fully:

(a) Remove the dust cap [2] for the gas charging valve [4].

(b) Loosen the swivel nut [3] a maximum of two turns.

NOTE: Fluid in the shock strut [1] can have bubbles when you release the pressure. Deflate the shock strut slowly to prevent the leakage of the fluid through the gas charging valve [4].

(c) Loosen the swivel nut [3] fully when all of the pressure in the shock strut [1] is released.

NOTE: The shock strut [1] is fully deflated when the dimension “X” is 13.8 in. (350.5 mm).

SUBTASK 32-21-00-680-001

(2) Drain the oil from the shock strut [1]:

(a) Remove the cap assembly [8] from the oil charging valve [9].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110 in a position to catch the oil when the oil charging valve [9] is opened.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Install the drain equipment on the oil charging valve [9].

1) Install the landing gear shock strut drain valve, SPL-1829, on the oil charging valve [9] to drain the shock strut [1].

2) If you wish to drain the shock strut [1] with a quicker method, do the steps that follow:

a) Cut a length of plastic ten foot hose (1/2 inch ID), STD-1140, long enough to reach the container on the floor.

b) Insert a small allen wrench in the end of the length of tubing so that the long end of the allen wrench is flush with the end of the tube and the short end goes through the wall of the tube.

c) Install the ten foot hose (1/2 inch ID), STD-1140 on the oil charging valve [9] so that the allen wrench goes into the check valve and holds it open to drain the oil.

(d) Remove the drain equipment when you have removed all of the oil.

SUBTASK 32-21-00-020-020

(3) Remove the oil charging valve [9] as follows:

(a) Remove the lockwire [7] from the oil charging valve [9].

(b) Remove the oil charging valve [9].

(c) Remove the packing [10] from the oil charging valve [9].

1) Discard the packing [10].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Oil Charging Valve
Figure 202/32-21-00-990-809

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-00-400-803

5. Nose Landing Gear Oil Charging Valve Installation

(Figure 202)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
24-22-00-860-814	Remove External Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32 Type I
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
10	Packing	32-21-00-01A-055	LOM ALL

D. Location Zones

Zone	Area
713	Nose Landing Gear

E. Prepare for the Installation

SUBTASK 32-21-00-480-013

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-00-860-020

(2) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

F. Nose Landing Gear Oil Charging Valve Installation

SUBTASK 32-21-00-420-015

(1) To install the new packing [10] on the oil charging valve [9], do these steps:

(a) Lubricate the new packing [10] with fluid, D00467, or fluid, D50022.

(b) Lubricate the surface of the oil charging valve [9] which the packing slides against with fluid, D00467, or fluid, D50022.

(c) Install the new packing [10] on the oil charging valve [9].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-00-640-005

(2) Lubricate the threads of the oil charging valve [9] with the fluid for the shock strut [1] (TASK 12-15-41-610-802).

SUBTASK 32-21-00-420-016

(3) Install the oil charging valve [9] on the shock strut [1].

NOTE: The cap assembly is installed when the shock strut is serviced.

(a) Tighten the body of the oil charging valve [9] to 22 ft-lb (30 N·m) - 25 ft-lb (34 N·m).

(b) Use the double twist method to install the lockwire [7] (MS20995C32 lockwire, G01048) on the oil charging valve [9] and shock strut [1].

(c) Apply compound, A00226, on the oil charging valve [9] and shock strut [1].

NOTE: This will make sure that the seal made by compound, A00226, will break if the body of the oil charging valve is loosened.

SUBTASK 32-21-00-600-003

(4) To service the shock strut [1], do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-00-860-024

(1) If electrical power is not necessary, do this task: Remove External Power, TASK 24-22-00-860-814.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the nose landing gear

(2) An installation of the nose landing gear.

TASK 32-21-00-000-801

2. Nose Landing Gear - Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-03 P/B 201	JACK AIRPLANE AXLES - MAINTENANCE PRACTICES
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-45-21-000-801	Nose Landing Gear Wheel and Tire Assembly - Removal (P/B 401)
32-51-31-000-802	Nose Gear Steering System Cables Removal (P/B 401)
33-45-01-000-801	Taxi Light Housing Assembly - Removal (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-4938	Insertion/Removal Tool - Contact (size 16, backshell side) Part #: M81969/1-03 Supplier: 11851 Part #: M81969/14-03 Supplier: 11139
SPL-1559	Adjustable Spanner Wrench (2.00 to 4.00 Inch Dia. Retainer) Part #: F72959-34 Supplier: 81205 Part #: F72959-35 Supplier: 81205 Part #: F72959-36 Supplier: 81205 Part #: F72959-41 Supplier: 81205 Opt Part #: F72959-5 Supplier: 81205 Opt Part #: F72959-6 Supplier: 81205 Opt Part #: F72959-7 Supplier: 81205 Opt Part #: F72959-8 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
SPL-1821	Adjustable Spanner Wrench (0.75 to 2.00 Inch Dia. Retainer, 0.12 x 0.12 Key Arm) Part #: F72959-40 Supplier: 81205 Opt Part #: F72959-4 Supplier: 81205
SPL-1871	Retention Straps - Shock Strut, NLG/MLG Part #: C32030 -31 Supplier: 81205 Opt Part #: C32030-10 Supplier: 81205
SPL-10305	Removal/Installation Equipment, Outrigger - NLG Part #: C32049-1 Supplier: 81205
SPL-14475	NLG Trunnion Pin Puller Assy, C32033-6 (included in C32033 Eqpt) Part #: C32033-1 Supplier: 81205
SPL-14476	Small Slide Hammer, C32033-20 (included in C32033 Eqpt) Part #: C32033-1 Supplier: 81205
STD-6545	Rope - Nylon

C. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
713	Nose Landing Gear

D. Access Panels

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

E. Prepare for the Removal

SUBTASK 32-21-00-480-006

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-00-860-003

(2) For hydraulic system A, make sure that the hydraulic power is removed (TASK 29-11-00-860-805).

SUBTASK 32-21-00-860-025

(3) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
E	4	C00700	HEATERS DRAIN MAST AIR

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-00-860-004

(4) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461			
D	14	C00123	EXT LIGHTING NOSE GEAR TAXI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
LOM ALL			
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
D	17	C01027	LANDING GEAR NOSE GEAR STEER
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-21-00-020-002

(5) Disconnect the NWS-A/B cables [49] (TASK 32-51-31-000-802).

(a) Install the rig pin NS2 in the drum for the Captain's control wheel.

LOM 443, 444, 464-999

(b) Install the rig pin NS10 in the drum for the First Officer's control wheel.

LOM ALL

(c) To get access to the cable turnbuckle [1], do this step:

1) Open this access panel:

(TASK 53-14-01-020-801)

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

(d) Remove the locking clips [2] for the cable turnbuckles [1] (View B, Figure 401).

(e) Loosen the tension at the cable turnbuckles [1].

(f) Disconnect the NWS-A/B cables [49] at the cable turnbuckles [1].

(g) Remove the bolts [88], washers [89], and pulleys [87] from the bracket that is outboard of the left trunnion pin [63].

1) Remove the NWS-A/B cables [49] from the guard [90] and grooves of the pulleys [87].

(h) Attach the identification tags to the NWS-A/B cables [49].

SUBTASK 32-21-00-020-003

(6) Do this task to disconnect the flexible conduits [73] (View C, Figure 401).

(a) Remove the screws [10] and washers [3] from the junction box cover [9].

(b) Remove the junction box cover [9] from the junction box [5].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 420, 422-434, 437-445, 450-454, 457-999; LOM 416, 446, 447 PRE SB 737-33-1156

(c) Disconnect the terminal block [72] from the junction box [5].

1) Pull the terminal block [72] out to get access to the wires during the removal.

(d) Identify the wires in the terminal block [72] that go to the landing gear and label them or make a drawing to be used during installation.

(e) Use a contact insertion / removal tool, COM-4938, tool to remove the wires from the terminal block [72] inside the junction box [5].

LOM 455, 456; LOM 416, 446, 447 POST SB 737-33-1156

(f) Disconnect the T15 and the terminal block [72] from the junction box [5].

1) Pull the T15 and the terminal block [72] out to get access to the wires during the removal.

(g) Identify the wires in the T15 and the terminal block [72] that go to the landing gear and label them or make a drawing to be used during installation.

(h) Remove the wires from the T15 inside the junction box [5], and use a contact insertion / removal tool, COM-4938, tool to remove the wires from the terminal block [72] inside the junction box [5].

LOM ALL

(i) Attach a string to each wire removed from the terminal block [72].

1) Make sure that the length of string is sufficient to go through the rigid conduit [4] to point “A”.

(j) If it is necessary, remove the lockwire from the flexible conduits [73].

(k) Disconnect the flexible conduits [73] at point “A” and pull the wires through.

1) Do not pull the string all the way through the conduit.

NOTE: The string is necessary to pull the wires back through the rigid conduit on installation.

(l) Disconnect the string from the wires.

SUBTASK 32-21-00-020-021

(7) Do this task to disconnect the flexible conduit [80] (View L, Figure 401).

(a) Remove the screws [85] and washers [84] from the junction box cover [86].

(b) Remove the junction box cover [86] from the junction box [82].

(c) Disconnect the terminal block [81] from the junction box [82].

1) Pull the terminal block [81] out to get access to the wires during the removal.

(d) Identify the wires in the terminal block [81] that go to the landing gear and label them or make a drawing to be used during installation.

(e) Use a contact insertion / removal tool, COM-4938, tool to remove the wires from the terminal block [81] inside the junction box [82].

(f) Attach a string to each wire removed from the terminal block [81].

1) Make sure that the length of string is sufficient to go through the rigid conduit [83] to the flexible conduit [80].

(g) If it is necessary, remove the lockwire from the flexible conduit [80].

(h) Disconnect the flexible conduit [80] from the rigid conduit [83] and pull the wires through.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Do not pull the string all the way through the conduit.

NOTE: The string is necessary to pull the wires back through the rigid conduit on installation.

(i) Disconnect the string from the wires.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-00-000-001

(8) If it is necessary, remove the taxi light, do this task: Taxi Light Housing Assembly - Removal, TASK 33-45-01-000-801.

LOM ALL

F. Nose Landing Gear Removal

SUBTASK 32-21-00-020-015

(1) Disconnect the hydraulic lines [25] (View E, Figure 401).

(a) Loosen the swivel nuts [77] to disconnect the hydraulic lines [25] from the swivel [24].

(b) Put caps on the hydraulic lines [25].

(c) Install plugs on each of the hydraulic ports of the swivel [24].

(d) Put tags to identify the swivel ports and hydraulic lines [25] that will prevent the crossing of the lines during the installation.

SUBTASK 32-21-00-020-006

(2) Disconnect the right upper rod assembly [26] (View F, Figure 401).

(a) Remove the pin [31], nut [32], and washer [30].

(b) Remove the bolt [27], washer [28], and bushing [29] from the clevis of the right trunnion [23].

(c) Use a rope to hold the upper rod assembly [26] away from the work area.

SUBTASK 32-21-00-020-007

(3) Disconnect the left upper rod assembly [41] (View H, Figure 401).

(a) Remove the pin [43], nut [42], and washer [44].

(b) Remove the bolt [47], washer [46], and bushing [45] from the clevis of the left trunnion [40].

(c) Use a rope to hold the upper rod assembly [41] away from the work area.

SUBTASK 32-21-00-020-008

(4) Remove each pulley [50] from the bracket [51] (View I, Figure 401).

(a) Remove the nut [52] and washer [53] from the bolt [47].

(b) Remove the bolt [47] and washer [48] that hold the pulley [50] and cable guard [54] from the bracket [51].

(c) Remove the washer [48] from the bolt [47].

(d) Remove the pulley [50] and cable guard [54] from the bracket [51].

(e) Remove the NWS-A/B cables [49] from the groove of the pulley [50].

SUBTASK 32-21-00-020-009

(5) Remove the seal [65] (View J, Figure 401).

(a) Remove the lockwire from the screw [58] and lock [57].

(b) Remove the screw [58] that holds the lock [57] to the left trunnion pin [63].

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(c) Remove the lock [57] from the left trunnion pin [63].

(d) Use the spanner wrench, SPL-1821 (face lug adapter), or spanner wrench set, SPL-1559, to remove the trunnion pin nut [68] from the left trunnion pin [63].

(e) Pull the seal ring [69] and seal [65] from the left trunnion pin [63].

1) If it is difficult to pull the seal [65], hold the eyebolt [67] and pull the seal [65] out of the left trunnion pin [63].

(f) Remove the nut [64], washer [56], and inboard retainer [66] from the eyebolt [67].

(g) Remove the eyebolt [67] from the left trunnion pin [63].

(h) Remove the outboard retainer [66] from the eyebolt [67].

(i) Isolate the segments of the seal [65] from the NWS-A/B cables [49].

(j) Pull the NWS-A/B cables [49] from the trunnion pin nut [68], seal ring [69], and left trunnion pin [63].

(k) Attach identification tags to the NWS-A/B cables [49].

(l) Wind the NWS-A/B cables [49] into a coil and attach it to the trunnion of the gear with a tape.

SUBTASK 32-21-00-020-010

WARNING DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(6) Deflate the shock strut [17] (View D, Figure 401).

(a) Remove the dust cap [14] for the gas charging valve [16].

(b) Loosen the swivel nut [15] a maximum of two turns.

(c) Deflate the shock strut slowly to prevent the leakage of the fluid through the gas valve.

NOTE: Fluid in the shock strut will have bubbles when the pressure is released.

(d) Loosen the swivel nut [15] fully when all of the pressure in the shock strut [17] is released.

SUBTASK 32-21-00-480-007

(7) Install the retention strap, SPL-1871, with the marker facing up to hold the shock strut [17] in its compressed position.

SUBTASK 32-21-00-580-002

(8) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

(a) Make sure that the chocks are installed at the main landing gear after the nose landing gear is lifted.

SUBTASK 32-21-00-580-005

(9) If it is necessary, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-21-00-020-017

(10) Do this task: Nose Landing Gear Wheel and Tire Assembly - Removal, TASK 32-45-21-000-801.

SUBTASK 32-21-00-020-016

(11) Disconnect the lower drag strut assembly [19] (View D, Figure 401).

(a) Remove the pin [11], nut [22], washer [21], and bolt [13] from the pin [18].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the nut [12] and washer [20] from the pin [18].

(c) Hold the lower drag strut assembly [19] in position and remove the pin [18].

(d) Use a nylon rope, STD-6545, to hold the lower drag strut assembly [19] away from the work area.

NOTE: When the pin is removed the lower drag strut will move forward.

SUBTASK 32-21-00-580-003

(12) If it is necessary to lift the gear with an axle jack to reduce the weight of the gear when the left trunnion pin [63] and right trunnion pin [37] are removed, do this task: Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E, TASK 07-11-03-580-802.

SUBTASK 32-21-00-020-011

(13) Remove the right trunnion pin [37] (View G, Figure 401).

(a) Remove the pin [35], nut [36], washer [34], and bolt [33].

(b) Remove the swivel [24] from the right trunnion pin [37].

(c) Use the NLG Trunnion Pin puller, C32033-6, SPL-14475, and small slide hammer, C32033-20, SPL-14476, to remove the right trunnion pin [37] from the right trunnion [23].

1) Make sure that the spacer [39] that is between the sidewall of the nose wheel well and right trunnion [23] is caught.

LOM ALL; AIRPLANES WITH PACKING PART NUMBER MS29513-031 OR MS29513-033

(d) Remove and discard the packing [74].

LOM ALL

SUBTASK 32-21-00-020-012

(14) Remove the left trunnion pin [63] (View J, Figure 401).

(a) Remove the pin [59], nut [60], washer [61], and bolt [62].

(b) Use the trunnion NLG Trunnion Pin puller, C32033-6, SPL-14475, and small slide hammer, C32033-20, SPL-14476, to remove the left trunnion pin [63] from the left trunnion [40].

1) Make sure that the spacer [71] that is between the sidewall of the nose wheel well and left trunnion [40] is caught (View K, Figure 401).

(c) Remove the cable guard [70] from the left trunnion pin [63].

LOM ALL; AIRPLANES WITH PACKING PART NUMBER MS29513-031 OR MS29513-033

(d) Remove and discard the packing [74].

LOM ALL

SUBTASK 32-21-00-860-005

(15) Measure the thickness of the spacer [39] and spacer [71] that were between the sidewalls of the wheel well and nose landing gear trunnion.

(a) Record the measurement of the washer stack for use when installing the washer stack.

NOTE: The thickness of the washer stacks are special for each airplane.

SUBTASK 32-21-00-020-013

(16) Remove the nose landing gear from the airplane.

(a) Move the nose landing gear forward in the wheel well.

(b) Turn the gear approximately 90 degrees such that it is clear of the wheel well sidewalls and nose wheel well doors.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Lower the nose landing gear at point E until it clears the nose wheel well (PAGEBLOCK 07-11-03/201).

(d) If it is necessary, use a dolly or the Outrigger R/I Equipment, SPL-10305, to transport the nose landing gear.

1) When the Outrigger R/I Equipment, SPL-10305, is installed and will be left unattended, chock the nose landing gear tires and lock the caster brake (PAGEBLOCK 10-11-05/201).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 1 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

(AIRPLANES WITH 3 CONDUITS TO THE JUNCTION BOX)

C

F98309 S0006574984_V7

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 2 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(AIRPLANES WITH 4 CONDUITS TO THE JUNCTION BOX)

C

J73703 S0000177295_V4

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 3 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 4 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3022968 S0000795208_V1

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 5 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 6 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 7 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 8 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 9 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 10 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3032302 S0000802915_V1

Nose Landing Gear Installation
Figure 401/32-21-00-990-802 (Sheet 11 of 11)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2426322 S0000560710_V1

Drag Strut Trunnion Pin Removal and Installation Equipment
Figure 402/32-21-00-990-807 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2426333 S0000560711_V1

Drag Strut Trunnion Pin Removal and Installation Equipment
Figure 402/32-21-00-990-807 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-00-400-801

3. Nose Landing Gear - Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
12-15-41-610-801	Nose Landing Gear Shock Strut Fluid Check (P/B 301)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
12-15-41-610-805	Nose Landing Gear Shock Strut Servicing, Airplane on Jacks (P/B 301)
12-21-21-640-801	Nose Landing Gear Upper End Components Servicing (P/B 301)
12-21-21-640-802	Nose Landing Gear Lower End Components Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-33-00-710-801	Operational Test for the Nose Landing Gear (P/B 501)
32-33-00-710-802	Nose Landing Gear Test - Component Replacement (P/B 501)
32-35-00-730-801	Nose Gear Manual Extension System Test - Airplane on Jacks (P/B 501)
32-45-21-400-801	Nose Landing Gear Wheel and Tire Assembly - Installation (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
32-51-00-820-802	Nose Wheel Steering System Adjustment (P/B 501)
32-51-31-400-802	Nose Gear Steering System Cables Installation (P/B 401)
33-45-01-400-801	Taxi Light Housing Assembly - Installation (P/B 201)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-4938	Insertion/Removal Tool - Contact (size 16, backshell side) Part #: M81969/1-03 Supplier: 11851 Part #: M81969/14-03 Supplier: 11139

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
SPL-1521	Strut Inflation Tool - Landing Gear Part #: F70200-35 Supplier: 81205 Opt Part #: F70200-1 Supplier: 81205 Opt Part #: F70200-14 Supplier: 81205 Opt Part #: F70200-17 Supplier: 81205 Opt Part #: F70200-18 Supplier: 81205
SPL-1559	Adjustable Spanner Wrench (2.00 to 4.00 Inch Dia. Retainer) Part #: F72959-34 Supplier: 81205 Part #: F72959-35 Supplier: 81205 Part #: F72959-36 Supplier: 81205 Part #: F72959-41 Supplier: 81205 Opt Part #: F72959-5 Supplier: 81205 Opt Part #: F72959-6 Supplier: 81205 Opt Part #: F72959-7 Supplier: 81205 Opt Part #: F72959-8 Supplier: 81205
SPL-1821	Adjustable Spanner Wrench (0.75 to 2.00 Inch Dia. Retainer, 0.12 x 0.12 Key Arm) Part #: F72959-40 Supplier: 81205 Opt Part #: F72959-4 Supplier: 81205
SPL-1871	Retention Straps - Shock Strut, NLG/MLG Part #: C32030 -31 Supplier: 81205 Opt Part #: C32030-10 Supplier: 81205
SPL-10305	Removal/Installation Equipment, Outrigger - NLG Part #: C32049-1 Supplier: 81205
SPL-14477	Alignment Pin Assy, C32033-2 (included in C32033 Eqpt) Part #: C32033-1 Supplier: 81205
SPL-14481	Removal/Installation Equipment - Trunnion Pin, NLG Part #: C32033-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
C00308	Compound - Corrosion Preventive, Petrolatum Hot Application	MIL-C-11796
C00528	Compound - Corrosion Preventive, Petroleum Hot Application (Soft Film)	MIL-C-11796 Class III
D00633	Grease - Aircraft General Purpose	BMS3-33
G00018	Nitrogen - Gaseous, Pressurizing, 99.5 Percent Pure	A-A-59503 Type I Grade B, MIL-PRF-27401 Type I Grade A
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50225	Lockwire - MS20995C20, Corrosion Resistant Steel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
11	Pin	32-21-00-02-005	LOM ALL
19	Strut assembly	32-21-21-02-155	LOM ALL
31	Pin	32-22-11-01A-005	LOM ALL
35	Pin	32-21-00-02-040	LOM ALL
43	Pin	32-22-11-01A-005	LOM ALL
59	Pin	32-21-00-02-040	LOM ALL
74	Packing	32-21-00-02-062	LOM 416, 420, 422-434, 437-447, 450-999
		53-14-51-01A-505	LOM 406
		53-14-51-01A-650	LOM 402, 406, 407, 412, 415

E. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
713	Nose Landing Gear

F. Access Panels

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

G. Prepare for the Installation

SUBTASK 32-21-00-480-011

(1) If it is necessary, use a dolly or the Outrigger R/I Equipment, SPL-10305, to move the nose landing gear.

(a) When the Outrigger R/I Equipment, SPL-10305, is installed and will be left unattended, chock the nose landing gear tires and lock the caster brake (PAGEBLOCK 10-11-05/201).

SUBTASK 32-21-00-480-008

(2) Install the retention strap, SPL-1871, with the marker facing up to hold the shock strut [17] in its compressed position.

SUBTASK 32-21-00-620-001

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION

DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(3) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

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(a) The threads and thread reliefs of the bolt [62] and bolt [33]

(b) The threads of the nut [60] and nut [36]

(c) The faces of the washer [61] and washer [34].

SUBTASK 32-21-00-160-001

(4) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate).

SUBTASK 32-21-00-640-002

(5) Lubricate the following items with grease, D00633:

(a) The shank of the bolt [62] and bolt [33]

(b) The shank of left trunnion pin [63] and right trunnion pin [37]

(c) The spacer [39] and spacer [71]

(d) The cable guard [70].

SUBTASK 32-21-00-160-002

(6) Remove all unwanted grease, D00633.

H. Nose Landing Gear Installation

SUBTASK 32-21-00-560-001

(1) Put the nose landing gear in its position for installation on the sidewall of the nose wheel well.

SUBTASK 32-21-00-580-004

(2) Lift the nose landing gear with an axle jack until the right trunnion [23] and left trunnion [40] align with the mating hole in the sidewall of the nose wheel well (TASK 07-11-03-580-802).

SUBTASK 32-21-00-420-001

(3) Install the right trunnion pin [37] (View G, Figure 401).

(a) Put the spacer [39] in its position between the right trunnion [23] and the sidewall of the nose wheel well.

LOM ALL; AIRPLANES WITH PACKING PART NUMBER MS29513-031 OR MS29513-033

(b) Apply grease, D00633, and install new packing [74] inside nose wheel well trunnion bushing.

LOM ALL

(c) Use the alignment pin assy, C32033-2, SPL-14477, to put the right trunnion pin [37] through the right trunnion [23], spacer [39], and sidewall of the nose wheel well.

(d) Use the nose landing gear trunnion pin alignment pin assembly, SPL-14481, to make sure that the hole in the right trunnion pin [37] for the bolt [33] aligns with the mating hole in the right trunnion [23].

(e) Put the swivel [24] through the right trunnion pin [37].

1) Make sure that the hole in the swivel [24] for the bolt [33] aligns with the mating hole in the right trunnion pin [37] and right trunnion [23].

(f) Put the bolt [33] through the right trunnion [23], right trunnion pin [37], and swivel [24].

(g) Install the washer [34] and nut [36] on the bolt [33].

(h) Tighten the nut [36] to 20 in-lb (2.3 N·m) - 24 in-lb (2.7 N·m) plus the run-on torque.

(i) Install the cotter pin [35] in the bolt [33].

1) If it is necessary, loosen the nut [36] to the nearest castellation to align the holes for the cotter pin [35].

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SUBTASK 32-21-00-420-002

(4) Install the left trunnion pin [63] (View K, Figure 401).

(a) Put the spacer [71] in its position between the left trunnion [40] and sidewall of the nose wheel well.

LOM ALL; AIRPLANES WITH PACKING PART NUMBER MS29513-031 OR MS29513-033

(b) Apply grease, D00633, and install new packing [74] inside nose wheel well trunnion bushing.

LOM ALL

(c) Use the alignment pin assy, C32033-2, SPL-14477, to put the left trunnion pin [63] through the left trunnion [40], spacer [71], and left sidewall of the nose wheel well.

(d) Use the nose landing gear trunnion pin alignment pin assembly, SPL-14481, to make sure that the hole in the left trunnion pin [63] for the bolt [62] aligns with the mating hole in the left trunnion [40].

(e) Put the cable guard [70] into the left trunnion pin [63].

1) Make sure that the hole in the cable guard [70] for the bolt [62] aligns with the mating hole in the left trunnion pin [63] and left trunnion [40].

(f) Put the bolt [62] through the left trunnion [40], left trunnion pin [63], and cable guard [70].

(g) Install the washer [61] and nut [60] on the bolt [62].

(h) Tighten the nut [60] to 20 in-lb (2.3 N·m) - 24 in-lb (2.7 N·m) plus the run-on torque.

(i) Install the cotter pin [59] in the bolt [62].

1) If it is necessary, loosen the nut [60] to the nearest castellation to align the holes for the cotter pin [59].

SUBTASK 32-21-00-220-002

(5) Measure the total axial freeplay in the trunnion.

NOTE: If the total axial freeplay is not correct, this will not cause any damage to the landing gear structure, but there may be a loud noise during landing gear extension/retraction.

(a) Use a thickness gage to measure the clearance between the spacer [39], spacer [71], and bushing faces of the sidewall or the trunnion on the two sides of the nose landing gear.

(b) Make sure that the combined clearance of the two trunnions is 0.008 in. (0.203 mm) - 0.015 in. (0.381 mm).

(c) If it is necessary to get the correct clearance, adjust the spacer [39] and spacer [71] stack thickness.

NOTE: It is recommended to make the spacer [39] and spacer [71] of equal thickness.

SUBTASK 32-21-00-080-003

(6) Remove the axle jack after the correct clearance has been achieved.

SUBTASK 32-21-00-420-003

(7) Install each pulley [50] on the bracket [51] (View I, Figure 401).

(a) Put the NWS-A/B cables [49] in its position on the groove of the pulley [50].

(b) Put the cable guard [54] and pulley [50] in their position on the bracket [51].

(c) Install the washer [48] on the bolt [47].

(d) Put the bolt [47] through the pulley [50], cable guard [54], and bracket [51].

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(e) Install the washer [53] and nut [52] on the bolt [47].

SUBTASK 32-21-00-420-004

> **CAUTION** MAKE SURE THAT THE STEERING CABLES DO NOT CROSS. CROSSED CABLES CAN INCREASE CABLE FRICTION WHICH CAN CAUSE DAMAGE TO THE CABLES.

(8) Connect the NWS-A/B cables [49] (TASK 32-51-31-400-802).

(a) Make sure that the rig pin NS2 is in the drum for the Captain's control wheel.

LOM 443, 444, 464-999

(b) Make sure that the rig pin NS10 is in the drum for the First Officer's control wheel.

LOM ALL

(c) Put the NWS-A/B cables [49] through the inboard side of the trunnion pin nut [68], seal ring [69], and left trunnion pin [63].

1) Make sure that the one NWS-A/B cable [49] goes over the trunnion pin bolt and one NWS-A/B cable [49] goes under the trunnion pin bolt where the cables go through the trunnion.

(d) For the pulleys [87] on the bracket that is outboard of the left trunnion pin [63], do these steps:

1) Put the NWS-A/B cables [49] in the grooves of the left trunnion pin [63] and through the guard [90].

2) Install the pulleys [87], bolts [88], and washers [89].

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

a) Install the bolts [88] with Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (optional).

b) Tighten the bolts [88] to 73 in-lb (8.2 N·m) - 77 in-lb (8.7 N·m).

(e) Apply a thin layer of corrosion preventive compound, C00308, or compound, C00528, to the threads on the internal and external surfaces of the mating adjustable parts on the cable turnbuckles [1].

(f) Connect the NWS-A/B cables [49] to the cable turnbuckles [1] (View B, Figure 401).

(g) Remove the identification tags attached to the NWS-A/B cables [49].

(h) Install the locking clips [2] on the cable turnbuckles [1].

SUBTASK 32-21-00-410-001

(9) Install the seal [65] (View J, Figure 401).

(a) Assemble the seal [65] around the cables [49] at the inboard end of the left trunnion pin [63].

(b) Install one retainer [66] on the eyebolt [67].

(c) Put the eyebolt [67] through the seal [65].

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(d) Install the other retainer [66], washer [56], and nut [64] on the eyebolt [67].

(e) Tighten the nut [64] sufficiently to clamp the seal [65].

(f) Loosen the nut [64] to approximately 1/4 turn until you can turn the eyebolt [67] with your fingers.

(g) Put the seal [65] into the left trunnion pin [63] until it touches the stop.

(h) Install the seal ring [69] into the left trunnion pin [63].

SUBTASK 32-21-00-620-002

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CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(10) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the trunnion pin nut [68].

SUBTASK 32-21-00-420-005

(11) Install the trunnion pin nut [68] (View J, Figure 401).

(a) Install the trunnion pin nut [68] on the inboard side of the left trunnion pin [63].

(b) Use the spanner wrench, SPL-1821, or spanner wrench set, SPL-1559, to tighten the trunnion pin nut [68] to 100 in-lb (11.3 N·m) - 150 in-lb (16.9 N·m).

(c) If it is necessary, loosen the trunnion pin nut [68] to align with the vernier of the lock holes.

(d) Install the lock [57] on the inboard side of the left trunnion pin [63].

(e) Install the screw [58] that holds the lock [57] to the left trunnion pin [63].

(f) Install the lockwire on the screw [58].

SUBTASK 32-21-00-710-001

(12) Make sure that the seal [65] will turn freely from the extended cable position of the gear to a simulated gear retracted cable position.

NOTE: This will verify that the cables will not become twisted when the gear is retracted.

SUBTASK 32-21-00-620-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(13) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The threads and thread reliefs of the bolt [27] and the bolt [47]

(b) The threads of the nut [32] and the nut [42]

(c) The faces of the washer [28], washer [30], washer [44], and washer [46].

SUBTASK 32-21-00-160-005

(14) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate).

SUBTASK 32-21-00-640-003

(15) Lubricate the chrome plated surfaces of the bolt [27], bolt [47], bushing [29], and bushing [45] with grease, D00633.

SUBTASK 32-21-00-160-006

(16) Remove all unwanted grease, D00633.

SUBTASK 32-21-00-420-006

(17) Connect the left upper rod assembly [41] (View H, Figure 401).

(a) Put the upper rod assembly [41] in its position on the clevis of the left trunnion [40].

(b) Put the bushing [45] through the clevis of the left trunnion [40] and rod end of the upper rod assembly [41].

(c) Install the washer [46] on the bolt [47].

(d) Put the bolt [47] through the clevis of the left trunnion [40] and rod end of the upper rod assembly [41].

(e) Install the washer [44] and nut [42] on the bolt [47].

(f) Tighten the nut [42] to 90 in-lb (10.2 N·m) - 125 in-lb (14.1 N·m).

(g) Install the pin [43] in the bolt [47].

1) If it is necessary, loosen the nut [42] to the nearest castellation to align the holes for the pin [43].

SUBTASK 32-21-00-420-007

(18) Connect the right upper rod assembly [26] (View F, Figure 401).

(a) Put the upper rod assembly [26] in its position on the clevis of the right trunnion [23].

(b) Put the bushing [29] through the clevis of the right trunnion [23] and rod end of the upper rod assembly [26].

(c) Install the washer [28] on the bolt [27].

(d) Put the bolt [27] through the clevis of the right trunnion [23] and rod end of the upper rod assembly [26].

(e) Install the washer [30] and nut [32] on the bolt [27].

(f) Tighten the nut [32] to 90 in-lb (10.2 N·m) - 125 in-lb (14.1 N·m).

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(g) Install the pin [31] in the nut [32].

1) If it is necessary, loosen the nut [32] to the nearest castellation to align the holes for the pin [31].

SUBTASK 32-21-00-420-008

(19) Connect the hydraulic lines [25] (View E, Figure 401).

(a) Remove the plugs from the hydraulic ports of the swivel [24].

(b) Remove the caps from the hydraulic lines [25].

(c) Connect the hydraulic lines [25] to the swivel [24].

(d) Remove the tags from the swivel [24] ports and hydraulic lines [25].

SUBTASK 32-21-00-620-004

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(20) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The threads and thread reliefs of the pin [18]

(b) The threads of the nut [12]

(c) The faces of the washer [20] and washer [21].

SUBTASK 32-21-00-160-003

(21) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate).

SUBTASK 32-21-00-640-004

(22) Lubricate the shank of the pin [18] and bolt [13] with grease, D00633.

SUBTASK 32-21-00-160-004

(23) Remove all unwanted grease, D00633.

SUBTASK 32-21-00-420-009

(24) Connect the lower drag strut assembly [19] (View D, Figure 401).

(a) Make sure that the drag brace lubrication fittings are on the right side when looking forward.

(b) Put the lower drag strut assembly [19] in its position on the clevis of the shock strut [17].

(c) Put the pin [18] through the clevis of the shock strut [17] and the lower drag strut assembly [19].

(d) Install the washer [20] and nut [12] on the pin [18].

(e) Tighten the nut [12] to 600 in-lb (67.8 N·m) - 700 in-lb (79.1 N·m).

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1) If it is necessary, loosen the nut [12] to the nearest castellation to align the holes for the bolt [13].

(f) Install the bolt [13] in the pin [18].

(g) Install the washer [21] on the bolt [13].

(h) Install the nut [22] on the bolt [13].

(i) Install the pin [11] in the bolt [13].

1) If it is necessary, loosen the nut [22] to the nearest castellation to align the holes for pin [11].

SUBTASK 32-21-00-420-012

(25) Do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, TASK 32-45-21-400-801.

SUBTASK 32-21-00-420-011

(26) Do this task to connect the wires to the terminal block [72] (View C, Figure 401).

(a) For airplanes that have three rigid conduits on the junction box [5], open the tee fitting on the aft side of the junction box [5].

(b) Pull the wires through the conduit.

1) Attach the strings that hang out of the end of the rigid conduits [4] to the wires that hang out of the flexible conduits [73].

2) Pull the wires through the rigid conduits [4] to the junction box [5].

3) Connect the flexible conduits [73] after the clamps [8] at point "A".

4) If it is necessary, install MS20995C20 lockwire, G50225, on the flexible conduits [73].

NOTE: The jam nuts with safety wire holes drilled through the corners must not be lockwired.

5) Remove the strings attached to the wires.

LOM 402, 404, 406, 407, 411, 412, 415, 420, 422-434, 437-445, 450-454, 457-999; LOM 416, 446, 447 PRE SB 737-33-1156

(c) Connect the wires to the terminal block [72] with a contact insertion / removal tool, COM-4938, tool using the drawing you made during the removal.

(d) Connect the terminal block [72] to the junction box [5].

LOM 455, 456; LOM 416, 446, 447 POST SB 737-33-1156

(e) Connect the wires to the T15 and the terminal block [72] with a contact insertion / removal tool, COM-4938, tool using the drawing you made during the removal.

(f) Connect the T15 and the terminal block [72] to the junction box [5].

LOM ALL

(g) Install the screws [10] and washers [3] to close the junction box cover [9] on the junction box [5].

SUBTASK 32-21-00-420-017

(27) Do this task to connect the wires to the terminal block [81] (View L, Figure 401).

(a) Pull the wires through the conduit.

1) Attach the strings that hang out of the end of the rigid conduit [83] to the wires that hang out of the flexible conduit [80].

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2) Pull the wires through the rigid conduit [83] to the junction box [82].

3) Connect the flexible conduit [80] to the rigid conduit [83].

4) If it is necessary, install MS20995C20 lockwire, G50225, on the flexible conduit [80].

NOTE: The jam nuts with safety wire holes drilled through the corners must not be lockwired.

5) Remove the strings attached to the wires.

(b) Connect the wires to the terminal block [81] with a contact insertion / removal tool, COM-4938, tool using the drawing you made during the removal.

(c) Connect the terminal block [81] to the junction box [82].

(d) Install the screws [85] and washers [84] to the close the junction box cover [86] on the junction box [82].

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-00-410-002

(1) Close this access panel:

(TASK 53-14-01-420-801)

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

SUBTASK 32-21-00-080-004

(2) Remove the retention strap, SPL-1871, from the nose landing gear.

SUBTASK 32-21-00-610-003

(3) Lubricate the nose landing gear (TASK 12-21-21-640-801, TASK 12-21-21-640-802).

SUBTASK 32-21-00-610-001

(4) To fully service the shock strut with the airplane on jacks, hold the shock strut in a vertical position and do these steps to service the shock strut with fluid:

(a) Install on the shock strut a retention strap, SPL-1871.

(b) Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on Jacks, TASK 12-15-41-610-805.

(c) Remove the retention strap, SPL-1871, from the nose landing gear.

SUBTASK 32-21-00-610-002

(5) To inflate the shock strut with the airplane on jacks, do these steps:

NOTE: To do these steps, you must have accomplished the steps to add fluid to the strut at the start of this task.

(a) Install the inflation tool, SPL-1521, on the gas valve.

(b) Inflate the shock strut with nitrogen, G00018, until you reach the fully extended pressure that is on the servicing placard (TASK 12-15-41-610-805).

(c) Close the gas valve.

(d) Remove the inflation tool, SPL-1521, from the gas valve.

(e) Install the cap on the gas valve.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-00-420-014

(6) If it is necessary, install the taxi light, do this task: Taxi Light Housing Assembly - Installation, TASK 33-45-01-400-801.

LOM ALL

SUBTASK 32-21-00-860-006

(7) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-21-00-790-001

(8) Check the swivel [24] for leakage.

SUBTASK 32-21-00-860-007

(9) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461			
D	14	C00123	EXT LIGHTING NOSE GEAR TAXI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
LOM ALL			
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
D	17	C01027	LANDING GEAR NOSE GEAR STEER
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-21-00-860-026

(10) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
E	4	C00700	HEATERS DRAIN MAST AIR

SUBTASK 32-21-00-710-003

(11) Do this task: Operational Test for the Nose Landing Gear, TASK 32-33-00-710-801.

NOTE: It is optional to perform the Nose Landing Gear Test - Component Replacement, TASK 32-33-00-710-802 instead of the operational test if a hydraulic cart is not available.

SUBTASK 32-21-00-710-004

(12) Do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, TASK 32-35-00-730-801.

SUBTASK 32-21-00-820-001

(13) Adjust the NWS-A/B cables [49] (TASK 32-51-00-820-802).

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SUBTASK 32-21-00-710-005

(14) Do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801.

SUBTASK 32-21-00-860-008

(15) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-21-00-580-006

(16) If airplane was lifted, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-21-00-860-009

(17) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-21-00-200-001

(18) Check the pressure and extension of the shock strut.

(a) Measure the pressure and extension of the shock strut.

1) Refer to the servicing placard and make sure that the pressure you measure is still correct for the extension of the shock strut (TASK 12-15-41-610-801).

2) If the pressure is not correct for the extension of the shock strut, fully service the shock strut (TASK 12-15-41-610-802).

NOTE: If the pressure is not correct for the extension of the shock strut, the shock strut does not have the proper amount of fluid.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR - INSPECTION/CHECK

1. General

A. This procedure contains the task to examine the nose landing gear.

B. This procedure does not remove or install the nose landing gear. Refer to (Nose Landing Gear - Installation, TASK 32-21-00-400-801) and(Nose Landing Gear - Installation, TASK 32-21-00-400-801) to remove and install the nose landing gear.

TASK 32-21-00-200-801

2. Nose Landing Gear Inspection

(Figure 601)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task provides the regular inspection of the nose landing gear.

(2) Refer to (Phase IA Inspection, TASK 05-51-01-210-801), (High Energy Stop, TASK 05-51-07-210-801), (Brake Seizure Conditional Inspection, TASK 05-51-15-210-801), and (Overweight Landing Inspection, TASK 05-51-35-210-801) for special inspection procedure on the following conditions:

(a) After a hard or overweight landing

(b) After a brake seizure when you tow the airplane, or is moving at high speed on the ground

(c) After the gear has collided with an obstacle

(d) After a high energy stop.

B. References

Reference	Title
05-51-01-210-801	Phase IA Inspection (P/B 201)
05-51-07-210-801	High Energy Stop (P/B 201)
05-51-15-210-801	Brake Seizure Conditional Inspection (P/B 201)
05-51-35-210-801	Overweight Landing Inspection (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-00-10-211-801	Landing Gear Inner Cylinder Chrome Inspection (P/B 601)
32-00-11-100-802	Nose Landing Gear Steering Actuators Chrome Surfaces Cleaning (P/B 701)
32-00-11-100-803	Nose Landing Gear Retract Actuator Chrome Surfaces Cleaning (P/B 701)
32-21-11-200-801	Nose Landing Gear Shock Strut Seal Leakage Check (P/B 801)
32-35-00-820-801	Nose Landing Gear Manual Extension System Adjustment (P/B 501)
32-45-00-700-801	Wheels Fast Check (Wheel Installed on the Airplane) (P/B 601)
32-45-00-700-803	Tires - Inspection (P/B 601)

C. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45

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(Continued)

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

D. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
713	Nose Landing Gear

E. Nose Landing Gear Inspection

SUBTASK 32-21-00-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-00-480-002

(2) Put chocks around the tires of all the landing gear (PAGEBLOCK 10-11-05/201).

SUBTASK 32-21-00-210-001

(3) Examine the upper components of the nose landing gear:

(a) Examine the drag strut for cracks, damage, and worn areas on the attach points.

(b) Examine the trunnion pins of the drag strut for worn areas and looseness.

(c) Examine the retract actuator as follows:

1) Damage, looseness, and security of actuator components and attachment bolts.

2) Dirt, scratches, and debris on exposed piston chrome and actuator body rod end nut.

3) Leaks and loose hydraulic connections.

4) Do this task: Nose Landing Gear Retract Actuator Chrome Surfaces Cleaning, TASK 32-00-11-100-803.

(d) Examine the lock links for cracks, damage, and worn areas on the attach points.

(e) Examine the lock link springs for worn areas, damage, and security of attachments.

(f) Examine the lock actuator and the hydraulic transfer cylinder for loose mounting bolts and leaks.

(g) Do these steps to examine the shock strut:

1) Examine the shock strut for leaks and specified extension, do this task: Nose Landing Gear Shock Strut Seal Leakage Check, TASK 32-21-11-200-801.

2) Examine the shock strut for cracks on the outer cylinder lugs.

3) Examine the external surface of the inner cylinder for dirt, scratches, or galling, do this task: Landing Gear Inner Cylinder Chrome Inspection, TASK 32-00-10-211-801.

(h) Make sure that the manual extension release mechanism is free from contamination:

1) Remove the cover from the manual release mechanism (TASK 32-35-00-820-801).

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2) If it is necessary, remove all contaminations from the manual extension release mechanism.

3) Install the cover on the manual release mechanism (TASK 32-35-00-820-801).

(i) Make sure that the wheel well doors are correctly attached to the push rods and the door hinges.

(j) Examine the door linkage for worn areas, damage, and security of attachments.

SUBTASK 32-21-00-210-002

(4) Examine the lower end components of the nose landing gear:

(a) Remove the summing mechanism cover and do the steps that follow:

1) Examine the summing mechanism cover for cracks, damage, and worn areas on the attach points.

2) Examine the summing mechanism for damage and worn areas.

3) Examine the steering metering valve for damage, leaks, and security of attachments.

4) Examine the steering actuators as follows:

a) Damage, looseness, and security of actuator components and attachment bolts.

b) Dirt, scratches, and debris on exposed piston chrome and actuator body rod end nut.

c) Leaks at the rod end seal and trunnion swivels.

d) Do this task: Nose Landing Gear Steering Actuators Chrome Surfaces Cleaning, TASK 32-00-11-100-802.

5) Examine the hydraulic connections for leaks.

6) Examine the steering cables to cable pulleys attachment.

(b) Examine the upper and lower steering sleeve as follows:

1) Make sure that the top steering sleeve is securely attached to the outer cylinder.

a) Examine the mounting bolts that attach the top steering sleeve to the outer cylinder for looseness or wear below the bolt heads.

b) Look for cracks in the compound, A00226, at the mounting nuts which attach the top steering sleeve to the outer cylinder.

c) Look for cracks in the sealant, A00247, at the interface between the top steering sleeve and the outer cylinder.

NOTE: Cracks in the sealant at the interface between the top steering sleeve and the outer cylinder could let moisture enter and cause corrosion.

2) Make sure that the lower steering plate and the retainer nut on the steering collar are tightly attached with no unusual or excessive play in the assembled joint.

a) Examine the lower steering plate for cracks, dirt, or worn areas.

(c) Install the summing mechanism cover.

(d) Examine the tires and wheels of the nose landing gear, do these tasks: Tires - Inspection, TASK 32-45-00-700-803 and Wheels Fast Check (Wheel Installed on the Airplane), TASK 32-45-00-700-801.

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LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

(e) Examine the taxi light wire harness for chafing and security of attachments.

LOM ALL

(f) Examine the safety sensors and all the electrical wiring for security and chafing.

(g) Examine the torsion links as follows:

1) Attachment to the shock strut are correct.

2) Examine the attachment lugs of the torsion links for cracks.

3) Examine the torsion links for cracks and loose mounting bolts.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Inspection
Figure 601/32-21-00-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Inspection
Figure 601/32-21-00-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-00-700-801

3. Nose Landing Gear Torsional Freeplay Inspection

(Figure 601, Figure 602)

A. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
12-15-41-610-801	Nose Landing Gear Shock Strut Fluid Check (P/B 301)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
FIM 32-51 TASK 804	Nose Wheel Shimmy or Vibrate at Taxi, Takeoff, or Landing - Fault Isolation

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1557	Gauge - Force Part #: DG-200 Supplier: 92456 Part #: FDIX 100 Supplier: 0BFD9 Part #: FDIX 50 Supplier: 0BFD9 Part #: LG-050 Supplier: 92456 Part #: LG-100 Supplier: 92456 Opt Part #: DPP-500G Supplier: 92456 Opt Part #: DPPH-150 Supplier: 92456 Opt Part #: DPPH-200 Supplier: 92456 Opt Part #: DPPH-50 Supplier: 92456 Opt Part #: FDI 100 Supplier: 0BFD9 Opt Part #: FDI 50 Supplier: 0BFD9 Opt Part #: FDV 100 Supplier: 0BFD9 Opt Part #: FDV 50 Supplier: 0BFD9
SPL-1891	Freeplay Equipment - NLG Part #: C32044-1 Supplier: 81205

C. Prepare to Examine the Torsional Free Play

SUBTASK 32-21-00-860-001

(1) Remove the pressure from the hydraulic systems A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-21-00-860-010

(2) Lift the nose of the airplane with jacks until the shock strut is fully extended, to lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-00-020-001

> **WARNING** CLEAR THE AREA BELOW THE NOSE BEFORE YOU DEFLATE THE SHOCK STRUT. IF YOU DEFLATE SHOCK STRUT, THE NOSE CAN MOVE DOWN AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(3) Deflate the shock strut for the nose landing gear:

(a) Remove the cap for the gas valve which is on the top of the shock strut.

> **WARNING** DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(b) Loosen the gas valve swivel nut a maximum of two turns.

NOTE: Fluid in the shock strut will have bubbles when you release the pressure. Deflate the shock strut slowly to prevent the leakage of the fluid through the gas valve.

(c) Loosen the gas valve swivel nut fully when all of the pressure in the shock strut is released.

NOTE: The shock strut is fully deflated when the dimension "X" is 13.9 in. (35.3 cm).

SUBTASK 32-21-00-580-001

(4) Lift the nose landing gear with the axle jack until you see approximately 4 in. (10.2 cm) of the chrome surface on the inner cylinder, do this task: Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E, TASK 07-11-03-580-802.

SUBTASK 32-21-00-480-003

(5) Install the freeplay equipment, SPL-1891 on the nose landing gear.

(a) Install the collar assemblies, C32044-4 and C323044-5 on the two actuator rods of the steering cylinders.

(b) Set the collar assemblies, C32044-4 and C32044-5 tightly against the actuator end plates to prevent any movement of the actuator rods.

SUBTASK 32-21-00-480-004

(6) Set the dial indicator gage on the platform to read the front and the aft motion of the right wheel rim.

NOTE: The gage must be installed on the forward side of the wheel on the axle centerline as near to the outboard edge of the rim as possible.

SUBTASK 32-21-00-480-005

(7) Install the lever arm assembly, C32044-2 on the tow fitting between the wheels on the nose landing gear.

D. Procedure to Examine the Torsional Free Play

SUBTASK 32-21-00-720-001

(1) Do these steps to examine the torsional free play of the nose landing gear:

(a) Measure60 in. (152 cm) on the lever arm assembly, C32044-2 from the shock strut centerline.

(b) From the 60 in. (152 cm) you measured on the lever arm assembly, C32044-2, use the force gauge, COM-1557 to apply a clockwise pull of 30 lbf (133 N).

(c) Set the dial indicator gage to "0" and loosen the load.

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(d) Apply a counterclockwise pull on the lever arm assembly, C32044-2 as in step (b).

(e) Write the value that you get on the dial indicator gage and loosen the load.

(f) Do the above five steps for a total of five cycles.

(g) Get the average value of the torsional free play.

NOTE: The average value must be less than 0.200 inch (5.1 mm). The free play agrees with 0.0172 radian.

SUBTASK 32-21-00-700-001

(2) If the torsional free play is satisfactory, put the airplane in its usual condition.

SUBTASK 32-21-00-700-002

(3) If the torsional free play stays more than the approved maximum, refer to: FIM 32-51 TASK 804.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-00-080-001

(1) Remove the dial indicator gage, dial indicator platform, and the lever arm assembly, C32044-2.

SUBTASK 32-21-00-080-002

(2) Remove the collar assemblies, C32044-4 and C32044-5 from the two actuator rods of the steering cylinders.

SUBTASK 32-21-00-860-002

(3) Do this task: Nose Landing Gear Shock Strut Fluid Check, TASK 12-15-41-610-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K32187 S0006574994_V2

Nose Landing Gear Torsional Free Play Inspection
Figure 602/32-21-00-990-803 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2854591 S0000670427_V1

Nose Landing Gear Torsional Free Play Inspection
Figure 602/32-21-00-990-803 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K32190 S0006574995_V2

Nose Landing Gear Torsional Free Play Inspection
Figure 602/32-21-00-990-803 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K32194 S0006574996_V2

Nose Landing Gear Torsional Free Play Inspection
Figure 602/32-21-00-990-803 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 POSITION GAGE IN FORE AND AFT DIRECTION

W02801 S0006574997_V2

Nose Landing Gear Torsional Free Play Inspection
Figure 602/32-21-00-990-803 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR - REPAIRS

1. General

A. This procedure contains these tasks:

(1) Repair of the flexible conduit of the Nose Landing Gear.

TASK 32-21-00-300-801

2. Repair of the Flexible Conduit on the Nose Landing Gear

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
SWPM 20-10-91	Repair of Flexible Electrical conduit

B. Consumable Materials

Reference	Description	Specification
B00067	Alcohol - Denatured, Ethyl (Ethanol)	AMS 3002 (Supersedes O-E-760)
B50073	Alcohol - Isopropyl	ASTM D 770
G00150	Tape - Nitto P-421 NAT (Formerly Permacel) PTFE Film Tape	
G50392	Sleeving - Expandable, Braided (Teflon, PFA)	BMS13-52 Type IV

C. Prepare for the Repair

SUBTASK 32-21-00-480-009

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-00-480-010

(2) Put chocks around the tires of all the landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Flexible Conduit of the Nose Landing Gear Repair

SUBTASK 32-21-00-960-001

(1) To replace the Teflon tape [4], do these steps:

(a) Remove the tape wrapping which extends approximately 12 in. (305 mm) on the flexible conduit [1].

(b) Clean the conduit with alcohol, B00067, or alcohol, B50073, to remove oils, Skydrol and unwanted material.

(c) Wind Nitto P-421 tape, G00150, on the area where the flexible conduit [1] touches the bracket [2].

NOTE: The tape must not extend more than three inches from the bracket.

(d) Apply a second layer of Teflon tape [4] in which the wrapping has an opposite start/end.

(e) Attach a string at the two ends of the Teflon tape [4].

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SUBTASK 32-21-00-300-001

(2) Do these steps to find the necessary repair if the flexible conduit [1] or flexible conduit [5] is damaged:

(a) Clean the conduit with alcohol, B00067, or alcohol, B50073, to remove oils, Skydrol and unwanted material.

(b) Examine the worn area.

1) Replace the conduit if damage extends through the outer silicone rubber, through the stainless steel and into the Teflon tubing at the next maintenance opportunity.

2) Replace or repair the conduit if there are worn or broken strands to the stainless steel braid.

3) The repair is not necessary if there are tears or cuts which do not extend through the outer silicone rubber layer.

SUBTASK 32-21-00-300-002

(3) Do these steps if a repair of the flexible conduit [1] or flexible conduit [5] is necessary (SWPM 20-10-91):

NOTE: A protective outer sleeve, G50392, with a 0.75 in. (19.05 mm) and natural color can be installed on the flexible conduit [1] or flexible conduit [5] at this time if desired.

(a) Cut frayed material from the damaged area of the flexible conduit [1] or flexible conduit [5] to prevent damage to the inner conduit layers.

(b) Wind the area with Nitto P-421 tape, G00150, with a minimum of three wrappings.

(c) Wind each layer in the opposite direction of the previous layer.

(d) Extend the Teflon tape [4] wrapping a minimum of more than 1 in. (25 mm) at each end of the worn or damaged area.

(e) Attach a string around the two ends of the Teflon tape [4].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1498574 S0000272415_V3

Nose Gear Flexible Conduit
Figure 801/32-21-00-990-804

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR SHOCK STRUT SEALS - REPAIRS

1. **General**

A. There are four tasks in this procedure that supply instructions to replace the seals on the shock strut of the nose landing gear.

(1) The first task is to install new dynamic seals, new static seals, and new spare seals on the lower bearing carrier. The inner cylinder is fully removed from the outer cylinder; the lower bearing carrier is removed; and, all of the seals are removed and replaced.

(2) The second task is to replace the active seals with the spare seals on the lower bearing carrier. The inner cylinder is partly removed from the outer cylinder; the leaky, active seals are removed; and, the spare seals are installed.

(3) The third task replaces the scraper ring. This task is used when the scraper ring is damaged and inner cylinder removal is not possible.

(4) The fourth task is to check hydraulic leaks on the shock strut of the nose landing gear.

B. Make sure all working areas, tools, and your hands are clean when you handle the elastomer seals. Some greases can cause the elastomer seals to swell too much. This can cause the seals to leak.

C. It is acceptable to install the spare dynamic seal in place of the active dynamic seal (cap seal assembly) to reduce leakage past the shock strut dynamic seal in cold weather. Re-install the cap seal assembly when warm weather returns.

NOTE: If you are going to operate the airplane for an extended period of time with the spare dynamic seal installed in the active dynamic seal position, then we recommend keeping a spare dynamic seal in the spare dynamic seal position in case the active seal develops a leak and need to be replaced.

We recommend a daily cleaning of the inner cylinder chrome (LANDING GEAR INNER CYLINDER CHROME - CLEANING/PAINTING, PAGEBLOCK 32-00-10/701) when operating the airplane with the spare dynamic seal in the active position.

TASK 32-21-11-960-801

2. **Replace the Active Static Seals and the Active Dynamic Seals with the Spare Seals**

(Figure 801, Figure 802, Figure 803)

A. General

(1) This task replaces the active static seals and the active dynamic seals with the spare seals on the lower bearing carrier of the nose landing gear.

(2) For this task you will partly disassemble the nose gear strut inner cylinder from the outer cylinder, pull the lower bearing carrier out of the outer cylinder and replace the active seals with the spare seals that are already installed.

B. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-06-580-803	Lower the Airplane Nose (P/B 201)
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)
32-45-21-000-801	Nose Landing Gear Wheel and Tire Assembly - Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1376	Scraper Plunger, C32016-2 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1377	Scraper Reducer, C32016-3 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1378	Scraper Retainer, C32016-4 or -67 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1379	Scraper Lock Assy, C32016-5 or -68 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1381	Dynamic Seal Stuffer, C32016-7 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205
SPL-1867	Wrench - Gland Nut, Shock Strut NLG Part #: C32025-7 Supplier: 81205 Opt Part #: C32025-1 Supplier: 81205
SPL-4047	Seal Puller Assy, C32016-6 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-12809	Strap Assembly, C32016-59 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205

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(Continued)

Reference	Description
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)

D. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D00589	Lubricant - Hydraulic Assembly - AFS-682	
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Cap assembly	32-21-00-01A-050	LOM ALL
5	Cap assembly	32-21-00-01A-050	LOM ALL
6	Valve	32-21-00-01A-060	LOM ALL
26	Spare dynamic seal	32-21-00-01A-205	LOM ALL
27	Spare static seal	32-21-00-01A-210	LOM ALL

F. Location Zones

Zone	Area
713	Nose Landing Gear

G. Prepare for the Replacement

SUBTASK 32-21-11-420-040

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-11-860-001

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-11-020-001

> **WARNING** CLEAR THE AREA BELOW THE NOSE BEFORE YOU DEFLATE THE SHOCK STRUT. IF YOU DEFLATE SHOCK STRUT, THE NOSE CAN MOVE DOWN AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(3) Deflate the shock strut [4] for the nose landing gear:

(a) Remove the cap assembly [1] for the gas valve [2], that is on the top of the shock strut [4].

> **WARNING** DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(b) Loosen the swivel nut [3] a maximum of two turns.

NOTE: Fluid in the shock strut can have bubbles when you release the pressure.

1) Deflate the shock strut [4] slowly to prevent the leakage of the fluid through the gas valve [2].

(c) Loosen the swivel nut [3] fully when all of the pressure in the shock strut [4] is released.

NOTE: The shock strut is fully deflated when the dimension "X" is 13.9 in. (353 mm).

SUBTASK 32-21-11-680-001

(4) Drain the hydraulic fluid from the shock strut [4]:

(a) Remove the cap assembly [5] from the oil charging valve [6].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110, in a position to catch the hydraulic fluid when the oil charging valve [6] is opened.

(c) Install the drain equipment on the oil charging valve [6]:

NOTE: The landing gear shock strut drain valve, SPL-1829, could also be used, but it will take much longer to drain the shock strut.

1) Cut a length of plastic tubing, sufficiently long to reach the container on the floor.

2) Insert a small allen wrench in the end of the length of tubing so that the long end of the allen wrench is flush with the end of the tube and the short end goes through the wall of the tube.

3) Install the tubing on the oil charging valve [6] so that the allen wrench goes into the check valve and holds it open to drain the hydraulic fluid.

(d) Remove the drain equipment when you have removed all of the hydraulic fluid.

SUBTASK 32-21-11-020-002

(5) Do this task: Nose Landing Gear Torsion Link Disconnection, TASK 32-21-31-000-803.

SUBTASK 32-21-11-480-002

(6) Lift the nose of the airplane until there is more than enough room to install the seal puller assembly [73] (seal puller assembly, C32016-6, SPL-4047) on the inner cylinder [12] after the gland nut [17] has been removed (TASK 07-11-21-580-801).

SUBTASK 32-21-11-580-003

(7) Use axle jack to hold the inner cylinder [12] in its position in the outer cylinder [9], (TASK 07-11-03-580-802).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-11-020-022

(8) Do this task: Nose Landing Gear Wheel and Tire Assembly - Removal, TASK 32-45-21-000-801.

SUBTASK 32-21-11-020-003

(9) Disconnect the gland nut [17] from the outer cylinder [9]:

(a) Remove the lockwire from the bolts [14].

(b) Remove the bolts [14], washers [15], and lockplate [16] to release the gland nut [17].

(c) Use a gland nut wrench, SPL-1867, to disconnect the gland nut [17] from the outer cylinder [9].

1) Keep the gland nut [17] in its position against the outer cylinder after you have disconnected it from the outer cylinder [9].

SUBTASK 32-21-11-580-004

(10) Lift the nose of the airplane until there is enough room to install the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) and scraper lock assembly [74] (scraper lock assembly, C32016-5 or -68, SPL-1379) on the gland nut [17] (TASK 07-11-21-580-801).

SUBTASK 32-21-11-480-005

(11) Install the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) and scraper lock assembly [74] (scraper lock assembly, C32016-5 or -68, SPL-1379) on the gland nut [17].

NOTE: This will make sure that the scraper ring [24] for the gland nut [17] does not come out of its groove.

(a) Install the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) on the gland nut [17].

(b) Install the scraper lock assembly [74] (scraper lock assembly, C32016-5 or -68, SPL-1379) to hold the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) in its position on the gland nut [17].

SUBTASK 32-21-11-020-023

(12) Move the gland nut [17] down at the inner cylinder [12].

(a) If the scraper ring [24] comes out of its groove, use the scraper plunger [80] (scraper plunger, C32016-2, SPL-1376) and scraper reducer [81] (scraper reducer, C32016-3, SPL-1377) to install the scraper ring [24] back in its groove.

SUBTASK 32-21-11-020-024

(13) Move the lower bearing carrier [23]:

(a) Loosely install the seal puller assembly [73] (seal puller assembly, C32016-6, SPL-4047) around the inner cylinder [12].

(b) Push the seal puller assembly [73] (seal puller assembly, C32016-6, SPL-4047) up, so that you can install it correctly at the bottom of the outer cylinder [9].

(c) Align the holes in the seal puller assembly [73] (seal puller assembly, C32016-6, SPL-4047) with the holes in the lower bearing carrier [23] for the puller screws [78].

(d) Install the carrier puller screws [78] to hold the seal puller assembly [73] (seal puller assembly, C32016-6, SPL-4047) to the lower bearing carrier [23].

(e) Tighten the retainer screws on each side of the seal puller assembly [73] (seal puller assembly, C32016-6, SPL-4047).

(f) Install the strap assembly [75] (strap assembly, C32016-59, SPL-12809) around the axle and connect the ends to the shoulder bolts on each side of the seal puller assembly [73] (seal puller assembly, C32016-6, SPL-4047).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-11-580-005

(14) Lift the airplane until the lower bearing carrier [23] is completely out of the outer cylinder [9] (TASK 07-11-21-580-801).

H. Active Static and Active Dynamic Seal with the Spare Seals Replacement

SUBTASK 32-21-11-900-001

(1) Replace the active static seals [28] with a spare static seals [27].

(a) Make sure that your hands are clean when you handle the elastomer seals.

NOTE: Some greases can cause the elastomer seals to swell too much. This can cause the seals to leak.

(b) Remove the two backup rings [29] from the active static seals [28].

(c) Make sure that the two backup rings [29] are serviceable.

NOTE: The recommended installation is to replace all the old backup rings with new backup rings. Use the old backup rings only after a full inspection, and new rings are not available.

1) Replace the two backup rings [29] if they have nicks, scratches or other damage.

(d) Use a plastic cutting tool with a backup strip to cut the active static seals [28] from its outer groove in the lower bearing carrier [23].

(e) Move the spare static seal [27] out of the spare seal groove in the lower bearing carrier [23].

CAUTION DO NOT APPLY VASELINE OR PETROLATUM TO THE SEALS. THIS CAN CAUSE THE SEAL MATERIAL TO BECOME LARGER. DAMAGE TO THE SEALS CAN OCCUR.

(f) Wipe the spare static seal [27] and backup rings [29] to remove unwanted hydraulic fluid and assembly lubricant.

(g) Put the spare static seal [27] in the static seal groove in the lower bearing carrier [23].

(h) Put the white backup rings [29] on the spare static seal [27] with the rounded edge of the backup rings [29] against the seal.

SUBTASK 32-21-11-020-005

(2) Remove the seal retainer [18]:

(a) Remove the bearing carrier pins [30] for the seal retainer [18].

(b) Move the seal retainer [18] away from the lower bearing carrier [23] to get access to the elastomer ring [19].

(c) Use tape to hold the seal retainer [18] in position on the inner cylinder [12], and to prevent it from moving down on the lower bearing carrier [23].

SUBTASK 32-21-11-900-002

(3) Replace the elastomer ring [19] with the spare dynamic seal [26]:

(a) Make sure that your hands are clean when you handle the elastomer seals.

NOTE: Some greases can cause the elastomer seals to swell too much. This can cause the seals to leak.

(b) Move the lower bearing carrier [23] up and down the inner cylinder [12] to move the elastomer ring [19], backup ring [21], and cap seal [20] from the inner groove of the lower bearing carrier [23].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) If the elastomer ring [19] does not come out of the inner groove of the lower bearing carrier [23], remove it with a tool that is not sharp.

NOTE: Hardened steel cotter pin removal tools work well for removing the dynamic seal.

1) Remove the backup ring [21], and cap seal [20] from the active dynamic seal elastomer ring [19] and discard.

2) Use a plastic cutting tool with a back-up strip to cut the elastomer ring [19] from the inner groove of the lower bearing carrier [23] and discard.

(d) Remove the backup rings [22] (4 rings total) from the spare dynamic seal groove and retain for installation.

(e) Remove the spare dynamic seal [26] from its groove in the lower bearing carrier [23] and move it down on the inner cylinder [12].

NOTE: The round sealing surface of the seal must be against the chrome on the inner cylinder.

CAUTION DO NOT APPLY VASELINE OR PETROLATUM TO THE SEALS. THIS CAN CAUSE THE SEAL MATERIAL TO BECOME LARGER. DAMAGE TO THE SEALS CAN OCCUR.

(f) Apply a thin layer of fluid, D00467, or AFS-682 lubricant, D00589, to the spare dynamic seal [26] and backup rings [22].

NOTE: AFS-682 lubricant, D00589, will help keep the backup rings in their positions.

(g) Put the white backup ring [22] on the spare dynamic seal [26] with the rounded edge of the backup ring [22] against the spare dynamic seal [26].

(h) Put one brown backup ring [22] on the outside of each white backup ring [22].

1) Position the split in the brown backup rings in the opposite positions on the diameter from the split in the adjacent white backup rings.

CAUTION MAKE SURE THAT THE BACKUP RINGS AND THE SEAL STAY TOGETHER WHEN YOU INSTALL THE SEAL. IF THE BACKUP RINGS AND THE SEAL MOVE APART, THEY WILL NOT INSTALL CORRECTLY. THIS CAN CAUSE DAMAGE TO THE SEAL AND THE BACKUP RINGS.

(i) Use the dynamic seal stuffer [82] (dynamic seal stuffer, , C32016-7, SPL-1381) to install the spare dynamic seal [26] and backup rings [22] in the active seal location in the lower bearing carrier [23] (View F-F, Figure 802).

(j) Put the seal retainer [18] in its position on the lower bearing carrier [23].

(k) Make sure that the seal retainer [18] is flush to the lower bearing carrier [23] all around the circumference before installing the retention bearing carrier pins [30].

NOTE: If the retainer is not flush, the spare dynamic seal [26] and backup rings [22] may not be installed correctly.

(l) If it is necessary, apply a thin layer of AFS-682 lubricant, D00589, to the seal retainer bearing carrier pins [30] to hold them in place while the lower bearing carrier is re-installed into the outer cylinder.

NOTE: AFS-682 lubricant, D00589, will help keep the seal retainer bearing carrier pins [30] in position. The material is a very thick, sticky material and heavy amounts can cause the bearing carrier to be difficult to re-install.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Use the minimum quantity of AFS-682 lubricant, D00589, needed to retain the bearing carrier pins [30].

2) Remove excess AFS-682 lubricant, D00589.

> **CAUTION**
> DO NOT USE FORCE TO INSTALL THE RETENTION PINS INTO THEIR POSITIONS. THE PINS WILL INSTALL FREELY. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE SEAL RETAINER.

(m) Install the bearing carrier pins [30] to retain the seal retainer [18] to the lower bearing carrier [23].

1) If the bearing carrier pins [30] are not free during installation, then make sure that the seal retainer [18] is flush to the bearing carrier, then reinsert the bearing carrier pins [30].

NOTE: If the seal retainer is not flush, the spare dynamic seal [26] and backup rings [22] may not have been correctly installed.

I. Put the Airplane Back to Its Usual Condition.

SUBTASK 32-21-11-420-003

(1) Move the lower bearing carrier [23] up the inner cylinder [12] into the outer cylinder [9].

SUBTASK 32-21-11-640-001

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(2) Apply a thin layer of Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to the threads of the gland nut [17] and to the threads of the outer cylinder [9].

SUBTASK 32-21-11-420-004

(3) Install the gland nut [17]:

(a) Apply corrosion inhibiting material, G50136, to gland nut thread major and minor diameters and to the mating outer cylinder [9] thread major and minor diameters, plus the outer cylinder thread relief prior to assembly.

(b) Wipe off excess corrosion inhibiting material, G50136, from the gland nut [17] and outer cylinder [9] joint after the gland nut installation is completed.

(c) Move the gland nut [17] up to the outer cylinder [9] and engage the threads.

I (d) Use a gland nut wrench, SPL-1867, for the gland nut [17] to tighten the gland nut [17] to 100 ft-lb (136 N·m) - 125 ft-lb (169 N·m).

SUBTASK 32-21-11-420-005

(4) Install the lockplate [16] for the gland nut [17] (Figure 802):

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION AGAINST CORROSION INHIBITOR MATERIAL, G50136. IF CORROSION INHIBITOR MATERIAL, G50136 GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER AND GET MEDICAL AID. THIS MATERIAL CONTAINS VERY POISONOUS AND FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of corrosion inhibiting material, G50136, to the shank and threads of bolts [14] and washers [15].

(b) Install the lockplate [16] in the holes that will put the tab of the lockplate [16] as close as possible to a slot in the outer cylinder [9].

1) If it is necessary, loosen the gland nut [17] slightly to align lockplate [16] with the slot in the outer cylinder [9].

(c) Install the bolts [14] and washers [15].

(d) Tighten the bolts [14].

(e) Install MS20995C32 lockwire, G01048, on the bolts [14] (TASK 20-10-44-400-801).

SUBTASK 32-21-11-420-006

(5) Install the oil charging valve [6]:

(a) Remove the valve [6] and packing [7].

(b) Discard the packing [7].

(c) Apply a thin layer of fluid, D00467, to the new packing [7].

(d) Install the new packing [7] on the valve [6].

(e) Lubricate the fitting thread with fluid, D00467.

(f) Install the oil charging valve [6] and tighten it to 22 ft-lb (30 N·m) - 25 ft-lb (34 N·m).

(g) Install lockwire on the oil charging valve [6] (TASK 20-10-44-400-801).

(h) Install the cap assembly [5] loosely.

NOTE: You will tighten it in the shock strut servicing task.

(i) Apply compound, A00226, to the valve [6].

NOTE: This will make sure that the seal made by compound, A00226, will break if the valve becomes loose.

SUBTASK 32-21-11-080-001

(6) Lower and remove the axle jack, do this task: Lower the Airplane Nose, TASK 07-11-06-580-803.

SUBTASK 32-21-11-080-002

(7) Lower the airplane nose and remove the jacks, do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-21-11-420-007

(8) Do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

SUBTASK 32-21-11-600-001

(9) Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

SUBTASK 32-21-11-420-008

(10) Make sure that the swivel nut [3] is tightened to 5 ft-lb (7 N·m) - 7 ft-lb (9 N·m).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-11-420-041

(11) Make sure that the cap assembly [1] is installed for the gas valve [2].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G52494 S0006575001_V3

Nose Landing Gear Shock Strut Seal Replacement
Figure 801/32-21-11-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(COMPONENTS REMOVED FOR ACCESS)

B

N65094 S0006575002_V2

Nose Landing Gear Shock Strut Seal Replacement
Figure 801/32-21-11-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(COMPONENTS REMOVED FOR ACCESS)

B

2854774 S0000670404_V1

Nose Landing Gear Shock Strut Seal Replacement
Figure 801/32-21-11-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAXI LIGHT WIRE HARNESS REMOVAL

C

N76271 S0006575003_V2

Nose Landing Gear Shock Strut Seal Replacement
Figure 801/32-21-11-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 1 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 2 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

GLAND NUT

B

GLAND NUT

C

1 OPTIONAL - USE SCRAPER PLUNGER TO REINSTALL SCRAPER RING

N67430 S0006575005_V4

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 3 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INSTALL THE GLAND NUT SCRAPER RING RETAINER

D

N65436 S0006575006_V2

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 4 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INNER CYLINDER REMOVAL FROM THE OUTER CYLINDER

E

N65619 S0006575007_V2

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 5 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INNER CYLINDER REMOVAL FROM THE OUTER CYLINDER

E

2854778 S0000670408_V1

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 6 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INNER CYLINDER COMPONENTS

F

G

G52498 S0006575008_V2

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 7 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INSTALL THE RING SEAL STUFFER

I

F-F

LOWER BEARING CARRIER REMOVAL AND INSTALLATION

H

SPARE DYNAMIC SEAL INSTALLATION

J

N65666 S0006575009_V5

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 8 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INSTALL THE RING SEAL STUFFER

I

F-F

LOWER BEARING CARRIER REMOVAL AND INSTALLATION

H

SPARE DYNAMIC SEAL INSTALLATION

J

2854779 S0000670409_V1

Removal of the Inner Cylinder from the Outer Cylinder
Figure 802/32-21-11-990-802 (Sheet 9 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Lower Bearing Carrier Seal Replacement
Figure 803/32-21-11-990-803 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Lower Bearing Carrier Seal Replacement
Figure 803/32-21-11-990-803 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 THIS VIEW FOR SCRAPER RING INSTALLATION P/N S37967-343G99.

2337543 S0000530626_V3

Lower Bearing Carrier Seal Replacement
Figure 803/32-21-11-990-803 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

N78734 S0006575012_V2

Upper Centering Cam Replacement
Figure 804/32-21-11-990-804

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2050012 S0000417172_V3

Dynamic Seal Installation using Optional Tooling
Figure 805/32-21-11-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-11-960-802

3. **Replace the Active Seals and Spare Seals**

(Figure 801, Figure 802, Figure 803, Figure 804, Figure 805)

A. **General**

(1) This task provides instructions to replace the active seals and the spare seals of the nose landing gear.

NOTE: To complete this task it is necessary to disassemble the inner cylinder from the outer cylinder.

(2) Use this task when there are no spare seals available on the lower bearing carrier to replace the active seals, and you will install a new 3-piece active dynamic seal.

B. **References**

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-06-580-803	Lower the Airplane Nose (P/B 201)
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-45-21-000-801	Nose Landing Gear Wheel and Tire Assembly - Removal (P/B 401)
32-45-21-400-801	Nose Landing Gear Wheel and Tire Assembly - Installation (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)

C. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1378	Scraper Retainer, C32016-4 or -67 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1379	Scraper Lock Assy, C32016-5 or -68 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
SPL-1867	Wrench - Gland Nut, Shock Strut NLG Part #: C32025-7 Supplier: 81205 Opt Part #: C32025-1 Supplier: 81205
SPL-13125	Retainer Pin, C32016-56 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-13126	Ram Assembly, C32016-47 (included in C32016 kit) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-13129	Rubber Band, C32016-58 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-23426	Seal Retainer, C32016-55 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)

D. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
D00589	Lubricant - Hydraulic Assembly - AFS-682	
D50022	Fluid - Landing Gear Shock Strut (Specifically For Preservation)	BMS3-32 Type I
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Cap assembly	32-21-00-01A-050	LOM ALL
5	Cap assembly	32-21-00-01A-050	LOM ALL
6	Valve	32-21-00-01A-060	LOM ALL
7	Packing	32-21-00-01A-055	LOM ALL
19	Elastomer ring	32-21-00-01A-225	LOM ALL
27	Spare static seal	32-21-00-01A-210	LOM ALL
28	Active static seal	32-21-00-01A-215	LOM ALL

F. Location Zones

Zone	Area
713	Nose Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Prepare for the Replacement

SUBTASK 32-21-11-420-042

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-11-710-003

(2) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
LOM 462-999			
B	14	C01968	EXTERIOR LIGHTING LTRTL - RIGHT
B	15	C01969	EXTERIOR LIGHTING LTRTL - LEFT
LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461			
D	14	C00123	EXT LIGHTING NOSE GEAR TAXI

LOM ALL

SUBTASK 32-21-11-860-002

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-21-11-020-006

> **WARNING** CLEAR THE AREA BELOW THE NOSE BEFORE YOU DEFLATE THE SHOCK STRUT. IF YOU DEFLATE SHOCK STRUT, THE NOSE CAN MOVE DOWN AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(4) Deflate the shock strut [4] for the nose landing gear:

(a) Remove the cap assembly [1] for the gas valve [2] that is on the top of the shock strut [4].

> **WARNING** DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(b) Loosen the swivel nut [3] a maximum of two turns.

NOTE: Fluid in the shock strut can have bubbles when you release the pressure.

1) Deflate the shock strut [4] slowly to prevent the leakage of the fluid through the gas valve [2].

(c) Loosen the swivel nut [3] fully when all of the pressure in the shock strut [4] is released.

SUBTASK 32-21-11-680-002

(5) Drain the hydraulic fluid from the shock strut [4]:

(a) Remove the cap assembly [5] from the oil charging valve [6].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110, in a position to catch the hydraulic fluid when the oil charging valve [6] is opened.

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(c) Install the drain equipment on the oil charging valve [6]:

NOTE: The landing gear shock strut drain valve, SPL-1829, could also be used, but it will take much longer to drain the shock strut.

1) Cut a length of plastic tubing, sufficiently long to reach the container on the floor.

2) Insert a small allen wrench in the end of the length of tubing, so that the long end of the allen wrench is flush with the end of the tube and the short end goes through the wall of the tube.

3) Install the tubing on the oil charging valve [6] so that the allen wrench goes into the check valve and holds it open to drain the hydraulic fluid.

(d) Remove the drain equipment when all of the hydraulic fluid is removed.

SUBTASK 32-21-11-580-011

CAUTION	IF LIFTING THE NOSE OUTSIDE; IN WINDY CONDITIONS; OR IF OTHER MAINTENANCE IS BEING PERFORMED AT THE SAME TIME AS LIFTING THE AIRPLANE NOSE, YOU MAY WANT TO USE A TAIL SUPPORT TO STABILIZE THE AIRPLANE. DO NOT LIFT THE NOSE OF THE AIRPLANE MORE THAN 84 INCHES (2.13 METERS). THE AIRPLANE WILL NOT BE STABLE IF YOU LIFT THE NOSE MORE THAN 84 INCHES (2.13 METERS).

(6) Lift the nose of the airplane until the lower surface of the shock strut outer cylinder [9] is approximately 36 in. (91 cm) above the ground (TASK 07-11-21-580-801).

SUBTASK 32-21-11-010-002

(7) Remove the wheels (TASK 32-45-21-000-801).

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-11-960-001

(8) Remove the taxi light lamp as follows:

(a) Remove the screws [53] and retainer [54].

NOTE: Retain the hardware for reinstallation.

(b) Pull out the lamp [55].

(c) Examine the gasket [58] and gasket [63] on the taxi light housing [57] and retainer [54].

1) If a gasket is damaged, replace it, gasket [58] or gasket [63].

(d) Remove the screws [62] and electrical wires [61] from the lamp terminal [56] behind the lamp [55].

NOTE: Retain the hardware for reinstallation.

1) Remove all dirt and corrosion from the ends of the electrical wires [61].

SUBTASK 32-21-11-020-025

(9) Disconnect and remove the taxi light wire harness [50] from the taxi light housing [57] and lower torsion link [49] as follows:

(a) Remove the lockwire [64] from the electric harness backshell [60].

(b) Loosen the electric harness backshell [60] from the housing thru fitting [59] and pull the wire harness [50] wires from the taxi light housing [57].

(c) Remove the screw [46], washer [44], washer [45], and nut [43] to disconnect the clamp from the taxi light assembly.

1) Disconnect the clamp with the electrical conduit attached.

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(d) Remove the nut [47] and washer [48] to disconnect the clamp from the inner cylinder [12].

1) Disconnect the clamp with the electrical conduit attached.

SUBTASK 32-21-11-420-031

(10) Use a rope to hold the taxi light wire harness [50] so that it is not in the way.

LOM ALL

H. Strut Torsion Links and Install Tooling Disassembly

SUBTASK 32-21-11-020-010

(1) Disconnect the lower torsion link [49] from the inner cylinder [12] as follows:

(a) Use a jack to hold the inner cylinder [12] in its position in the outer cylinder [9], or when moving the inner cylinder [12] out of or into the outer cylinder [9] unless otherwise directed (TASK 07-11-03-580-802).

(b) Remove the pin [52], nut [51], and washer [41] from the torsion link pin [42].

(c) Remove the torsion link pin [42] to disconnect the lower torsion link [49] from the inner cylinder [12].

(d) Supply a rope or other suitable tieback for the lower torsion links [49] to hold them out of the work area.

SUBTASK 32-21-11-020-029

WARNING SHOCK STRUT FLUID MAY LEAK FROM THE GLAND NUT AREA WHEN THE GLAND NUT IS LOOSENED AND MOVED DOWN THE INNER CYLINDER. SHOCK STRUT FLUID MAY CAUSE HARM TO PERSONNEL. USE LINT FREE CLOTH PADS TO ABSORB LEAKAGE.

(2) Disconnect the gland nut [17] from the outer cylinder [9] as follows:

(a) Measure and write down, the dimension from the gland nut [17] lower surface to the outer cylinder [9] lower surface.

NOTE: This measurement will be used to make sure of the proper stack up of the lower bearing carrier components upon reinstallation in the outer cylinder.

(b) Remove the lockwire from bolt [14].

(c) Remove the bolts [14], washers [15], and lockplate [16] to release the gland nut [17].

(d) Wrap towels around the inner cylinder [12], one on top of the other, to absorb fluid when you slowly loosen the gland nut [17].

1) Use a bucket to catch the fluid dripping from the towel.

(e) Use a gland nut wrench, SPL-1867, to slowly loosen the gland nut [17] until the fluid begins to flow from the outer cylinder [9].

1) When the fluid flow stops, disconnect the gland nut [17] from the outer cylinder [9].

(f) Hold the gland nut [17] in its position against the outer cylinder [9] after you have disconnected it from the outer cylinder [9].

SUBTASK 32-21-11-480-006

(3) Install the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) and scraper lock assembly [74] on the gland nut [17].

NOTE: This will make sure that the scraper ring for the gland nut does not come out of its groove.

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(a) Install the scraper retainer [79].

(b) Install the scraper lock assembly [74] to hold the scraper retainer [79] in its position on the gland nut [17].

SUBTASK 32-21-11-020-030

(4) Move the gland nut [17] down to the bottom of the inner cylinder [12].

(a) If the scraper ring [24] comes out of its groove, use the scraper plunger [80] and scraper reducer [81] to install the scraper ring [24] back in its groove.

SUBTASK 32-21-11-020-031

(5) Move lower bearing carrier [23] as follows:

(a) Loosely install the seal puller assembly [73] around the inner cylinder [12].

(b) Push the seal puller assembly [73] up, such that it will install correctly at the bottom of the outer cylinder [9].

(c) Align the holes in the seal puller assembly [73] with the holes in the lower bearing carrier [23] for the puller screws [78].

(d) Install the carrier puller screw [78] to hold the seal puller assembly [73] to the lower bearing carrier [23].

(e) Tighten the retainer screws on each side of the seal puller assembly [73].

(f) Use the jack to lift the inner cylinder [12] until the scraper lock assembly [74] is approximately 6 in. (15 cm) below the seal puller assembly [73].

(g) Install the strap assembly [75] around the axle and connect the ends to the shoulder bolts on each side of the seal puller assembly [73].

(h) Use the jack to lower the inner cylinder [12] until the lower bearing carrier [23] is completely out of the outer cylinder [9].

1) Do not lower more than necessary.

(i) Move the lower bearing carrier [23] by hand down on top of the gland nut [17].

NOTE: The bearing carrier pin may fall to ground during the movement of the lower bearing carrier down the inner cylinder.

(j) Remove the bearing carrier pin [30] and retain for re-installation.

(k) Remove the inner cylinder [12] from the outer cylinder [9]:

WARNING MAKE SURE A MINIMUM OF TWO PERSONS WILL HOLD THE INNER CYLINDER WHEN YOU DO THE SUBSEQUENT STEPS. THE INNER CYLINDER IS HEAVY. INJURY TO PERSONS OR DAMAGE TO THE EQUIPMENT CAN OCCUR IF THE INNER CYLINDER IS NOT HELD PROPERLY.

1) Use two people to lift the inner cylinder [12] off of the jack.

2) Move the jack away from the area.

WARNING KEEP THE CYLINDER UP RIGHT. THE INNER CYLINDER CONTAINS SHOCK STRUT FLUID WHICH MAY FLOW OUT. USE A CONTAINER TO CAPTURE ANY REMAINING FLUID. THE FLUID CAN CAUSE INJURY TO PERSONNEL OR EQUIPMENT.

3) Lower the inner cylinder [12] out of the outer cylinder [9].

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(l) Pour the remaining shock strut fluid into a suitable 5 gal (19 l) container.

NOTE: Total strut fluid is approximately 0.88 gal (3.3 l).

NOTE: Debris from normal operation sometimes accumulates in the shock strut fluid. If necessary, the inner cylinder may be flushed with fluid, D00467, to ensure there is no debris upon reassembly.

(m) Move the inner cylinder [12], lower bearing carrier [23], and gland nut [17] to a suitable location for further disassembly.

NOTE: Two persons can transport the inner cylinder by holding the assembly by the axles and holding the inner cylinder upright.

SUBTASK 32-21-11-840-003

(6) Use a plastic bag of suitable proportions to cover the open inner cylinder [12] and outer cylinder [9] when you are not directly working on them, to exclude the possibility of dirt or debris getting inside the cylinders.

I. Inner Cylinder Components Disassembly

SUBTASK 32-21-11-020-014

(1) Remove the upper bearing assembly [8] and recoil valve assembly from the top of the inner cylinder [12]:

(a) Remove the insert [8A] from the upper bearing halve [85].

1) Pull the insert [8A] apart slightly and slide it up and off the upper bearing halves [85].

2) Inspect the insert [8A] for damage and excessive wear.

a) The insert [8A] thickness must be greater than or equal to 0.0865 in. (2.1971 mm).

b) Replace the insert [8A] if necessary.

(b) Remove the upper bearing halve [85] from the inner cylinder [12].

(c) Remove the recoil valve [87] and ring [86].

SUBTASK 32-21-11-020-015

(2) Remove the upper centering cam [10] and lower centering cam [11] from the inner cylinder [12].

(a) Remove the dowel retaining circlip [88] and dowel [89] from the inner cylinder [12].

SUBTASK 32-21-11-020-032

(3) Remove the lower bearing carrier [23] from the inner cylinder [12].

(a) Use rubber mallet and lightly hit the bottom of the seal puller assembly [73] until the lower bearing carrier [23] can be pulled off at the top of the inner cylinder [12].

NOTE: The lower bearing carrier is coated with a dry lubricant film. The film may be worn and appear uneven, this is not cause for bearing carrier replacement.

(b) Remove the puller screw [78] to disconnect the seal puller assembly [73] from the lower bearing carrier [23].

(c) Remove the seal puller assembly [73] from the lower bearing carrier [23].

(d) Remove the lower bearing insert [93] from the lower bearing carrier [23].

1) Inspect the lower bearing insert [93] for damage and excessive wear.

a) The lower bearing insert [93] must be greater than or equal to 0.0865 in. (2.1971 mm).

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b) Replace the lower bearing insert [93] if necessary.

(e) Install the lower bearing insert [93] on the lower bearing carrier [23].

SUBTASK 32-21-11-020-033

(4) Remove the seal retainer [18]:

(a) Move the seal retainer [18] away from the lower bearing carrier [23] to get access to the elastomer ring [19].

J. Active Dynamic Seal, Active Static Seal, and Spare Seals Replacement

NOTE: Perform this task in a sheltered and clean environment. Make sure that all fay surfaces of components have been cleaned and are free of debris before re-assembly.

NOTE: You may disassemble the lower bearing carrier components all at once to aid in cleaning of the lower bearing carrier before reassembly.

SUBTASK 32-21-11-900-007

(1) Install a new scraper ring [24] on the gland nut [17] if there is any sign of damage or wear on the old scraper ring [24]:

NOTE: The scraper ring prevents dirt and debris from entering the shock strut when the inner cylinder and outer cylinder compress.

(a) Remove the gland nut [17] from the inner cylinder [12].

(b) Remove the scraper retainer [79] and scraper lock assembly [74] from the gland nut [17].

(c) Remove the old scraper ring [24] from its groove on the gland nut [17].

(d) Install the new scraper ring [24] in its groove on the gland nut [17].

1) Make sure that to use the correct scraper configuration to be installed in its groove on the gland nut [17].

NOTE: There are two possible scraper configurations used for installation (Figure 803).

SUBTASK 32-21-11-480-007

(2) Install the scraper retainer [79] and scraper lock assembly [74] on the gland nut [17].

NOTE: This will make sure that the new scraper ring for the gland nut does not come out of its groove.

(a) Install the scraper retainer [79] on the gland nut [17].

(b) Install the scraper lock assembly [74] to hold the scraper retainer [79] in its position on the gland nut [17].

SUBTASK 32-21-11-900-009

(3) Replace the excluder [25] on the lower bearing carrier [23] if there is a sign of damage or wear.

NOTE: The excluder prevents dirt and debris from damaging the active static seal.

(a) Remove the excluder [25] from its groove in the lower bearing carrier [23].

(b) Install the new excluder [25] in its groove in the lower bearing carrier [23].

1) Put the excluder [25] in a sealed plastic bag and submerge the bag in hot water (not boiling) for 3-5 minutes.

2) Apply a thin layer of fluid, D50022, (preferred) or fluid, D00467, (alternate) onto the excluder [25].

3) Put shock fluid, D50022, (preferred) or fluid, D00467, (alternate) on the surface on that the excluder [25] will move.

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4) Position the excluder [25] evenly on the carrier with the spring facing down (toward the gland nut [17]).
   a) Zip ties can be used to help with this step.
5) Carefully slide the excluder [25] into position in it's carrier groove.
6) Make sure that you move the seal evenly down the carrier and do not allow it to roll over.
7) Make sure that the excluder stay in it's proper position until it reaches room temperature and has conformed to it's original shape.
   a) A compression ring can be used to lightly hold the excluder [25] in it's place until it reaches room temperature.

SUBTASK 32-21-11-900-003

(4) Replace the active static seal [28] (Figure 803):

> **CAUTION** MAKE SURE THAT YOUR HANDS, TOOLS AND THE WORK AREA ARE CLEAN BEFORE YOU HANDLE THE ELASTOMER SEALS. SOME GREASES CAN CAUSE THE ELASTOMER SEALS TO SWELL. IF YOU DO NOT OBEY, SEAL LEAKS CAN OCCUR.

(a) Remove the backup rings [29] from the active static seal [28].

(b) Remove the active static seal [28] from its groove on the lower bearing carrier [23].

> **CAUTION** DO NOT APPLY VASELINE OR PETROLATUM TO THE SEALS. THIS CAN CAUSE THE SEAL MATERIAL TO BECOME LARGER. DAMAGE TO THE SEALS CAN OCCUR.

(c) You may apply a very thin layer of fluid, D00467,or AFS-682 lubricant, D00589, to the new active static seal [28] and backup rings [29] to aid in keeping the rings in position during installation.

NOTE: The material is a very thick, sticky material and heavy amounts can cause the bearing carrier to be difficult to re-install.

1) Use the minimum quantity of AFS-682 lubricant, D00589, necessary to keep the parts in position.
2) Remove excess AFS-682 lubricant, D00589.

NOTE: Use of excess AFS-682 lubricant, D00589, can cause problems with assembly of the components.

(d) Install the new active static seal [28] in its groove on the lower bearing carrier [23].

> **CAUTION** MAKE SURE THE RADIUSED EDGE OF THE BACKUP RING IS INSTALLED AGAINST THE SEAL. IF NOT INSTALLED WITH THE RADIUSED EDGE AGAINST THE SEAL, THE SEALS WILL LEAK AFTER ASSEMBLY.

(e) Install the first backup rings [29] on the active static seal [28] with the rounded edge of the backup rings [29] against the seal.

(f) Install the second backup rings [29] with the split in the opposite positions on the diameter of the lower bearing carrier [23] as of the split of the first backup rings [29] installed.

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SUBTASK 32-21-11-900-004

(5) Replace the spare static seals [27]:

> **CAUTION** MAKE SURE THAT YOUR HANDS, TOOLS AND THE WORK AREA ARE CLEAN BEFORE YOU HANDLE THE ELASTOMER SEALS. SOME GREASES CAN CAUSE THE ELASTOMER SEALS TO SWELL. IF YOU DO NOT OBEY, SEAL LEAKS CAN OCCUR.

(a) Install the new spare static seals [27] in its groove on the lower bearing carrier [23].

1) Make sure that the spare static seal [27] is in the correct position (View A, Figure 803).

SUBTASK 32-21-11-900-005

> **CAUTION** MAKE SURE THAT THE BACKUP RING, THE CAP, AND THE SEAL STAY TOGETHER WHILE YOU INSTALL THE SEAL. IF THE BACKUP RING, THE CAP, AND THE SEAL MOVE APART, THEY WILL NOT INSTALL CORRECTLY. THIS CAN CAUSE DAMAGE TO THE SEAL, THE CAP, AND THE BACKUP RING.

(6) Replace the active dynamic seal:

(a) Remove the cap seal [20], backup ring [21], and elastomer ring [19] from the inner groove on the lower bearing carrier [23].

> **CAUTION** DO NOT APPLY VASELINE OR PETROLATUM TO THE SEALS. THIS CAN CAUSE THE SEAL MATERIAL TO BECOME LARGER. DAMAGE TO THE SEALS CAN OCCUR.

(b) You may apply a thin layer of fluid, D00467, or AFS-682 lubricant, D00589, to the elastomer ring [19], cap seal [20], and backup ring [21] to aid in keeping the backup rings [21] in position during installation.

NOTE: The material is a very thick, sticky material and heavy amounts can cause the bearing carrier to be difficult to re-install.

1) Use the minimum quantity of AFS-682 lubricant, D00589, necessary to keep the parts in position.

2) Remove excess AFS-682 lubricant, D00589.

NOTE: Use of excess AFS-682 lubricant, D00589, can cause problems with assembly of the components.

(c) The three parts of the active dynamic seal can be assembled on the inner cylinder [12] and then placed in the dynamic seal groove of the lower bearing carrier [23] or the parts can be installed in the groove one at a time.

(d) Install the backup ring [21] of the new dynamic seal in the inner groove for the active dynamic seal.

NOTE: The edge radius should be facing up and towards the elastomer ring.

(e) Install the cap seal [20] in the inner groove for the active dynamic seal.

(f) Install the elastomer ring [19] in its groove on the lower bearing carrier [23] (View B, Figure 803).

NOTE: The wide seal edge is pointed toward the bottom of the lower bearing carrier.

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SUBTASK 32-21-11-900-008

(7) Replace the spare dynamic seal [26]:

(a) Install a spare dynamic seal [26] if there is no spare dynamic seal in the spare seal groove on the lower bearing carrier [23].

(b) Install the spare dynamic seal backup ring [22] in the spare seal groove on the lower bearing carrier [23].

SUBTASK 32-21-11-420-021

(8) Install the seal retainer [18] or optional seal retainer [97] (seal retainer, C32016-55, SPL-23426):

NOTE: You may use optional seal retainer to aid in properly installing the dynamic seal.

(a) Put the seal retainer [18] in its position on the lower bearing carrier [23].

(b) Make sure that the seal retainer [18] is flush to the lower bearing carrier [23] all around the circumference before installing the bearing carrier pin [30] in place.

NOTE: If the seal retainer is not flush, the active dynamic seal and backup rings may not be installed correctly.

(c) You may apply a thin layer of AFS-682 lubricant, D00589, to the bearing carrier pin [30] to hold them in place while the lower bearing carrier [23] is re-installed into the outer cylinder [9].

NOTE: AFS-682 lubricant, D00589, will help keep the bearing carrier pins in position.

1) Use the minimum quantity of AFS-682 lubricant, D00589, needed to retain the pins.

NOTE: The material is a very thick, sticky material and heavy amounts can cause the bearing carrier to be difficult to re-install.

2) Remove excess AFS-682 lubricant, D00589.

CAUTION

DO NOT FORCE THE RETENTION PINS INTO PLACE. THE PINS SHOULD FIT FREELY. FORCING THE PINS INTO PLACE CAN CAUSE DAMAGE TO THE SEAL RETAINER.

(d) Install the bearing carrier pins [30] to retain the seal retainer [18] to the lower bearing carrier [23].

1) If the bearing carrier pin [30] are not free during installation, make sure that the seal retainer [18] is flush to the bearing carrier, then reinsert the pins.

2) If the seal retainer [18] is not flush, the active dynamic seal may have not been installed correctly.

(e) Install the optional seal retainer [97] (seal retainer, C32016-55, SPL-23426).

1) Put the seal retainer [97] (seal retainer, C32016-55, SPL-23426) in its position on the lower bearing carrier [23].

2) Install the retainer pin [94] (retainer pin, C32016-56, SPL-13125) to connect the seal retainer to the lower bearing carrier [23].

3) Install the rubber band [95] (rubber band, C32016-58, SPL-13129) to hold the retainer pin [94] (retainer pin, C32016-56, SPL-13125) in position.

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SUBTASK 32-21-11-840-002

> **WARNING**
> MAKE SURE A MINIMUM OF TWO PERSONS WILL HOLD THE INNER CYLINDER WHEN YOU DO THE SUBSEQUENT STEPS. THE INNER CYLINDER IS HEAVY. INJURY TO PERSONS OR DAMAGE TO THE EQUIPMENT CAN OCCUR IF THE INNER CYLINDER IS NOT HELD PROPERLY.

(9) Hold the inner cylinder [12] in a vertical position.

SUBTASK 32-21-11-480-011

(10) Coat the dynamic seal guide [84] and lower bearing carrier [23] with fluid, D00467.

SUBTASK 32-21-11-480-008

(11) Install the dynamic seal guide [84] at the top of the inner cylinder [12].

SUBTASK 32-21-11-420-022

(12) Install the lower bearing carrier [23]:

NOTE: You can install the lower bearing carrier into the dynamic seal guide at the workbench and then install the dynamic seal guide with the lower bearing carrier onto the top of the cylinder.

> **CAUTION**
> MAKE SURE THAT THE BACKUP RINGS AND THE SEAL STAY TOGETHER WHEN YOU MOVE THE LOWER BEARING CARRIER. IF THE BACKUP RINGS AND THE SEAL MOVE APART, THEY WILL NOT INSTALL CORRECTLY. THIS CAN CAUSE DAMAGE TO THE SEAL AND THE BACKUP RINGS.

(a) Put the lower bearing carrier [23] in its position for installation on the inner cylinder [12].

(b) Use a rubber mallet and lightly hit the top of the lower bearing carrier [23] until it passes the dynamic seal guide [84].

(c) Move the lower bearing carrier [23] down to the bottom of the inner cylinder [12].

1) Use ram assembly [96] (ram assembly, C32016-47, SPL-13126) as necessary to help install the lower bearing carrier [23] onto the inner cylinder [12].

2) If you used optional seal retainer [97] for the installation, then remove the rubber band [95], retainer pin [94] and seal retainer [97].

3) After removing the optional seal retainer [97], look down into the lower bearing carrier [23] and examine the dynamic seal.

a) Make sure that the dynamic seal appears fully seated.

4) Install the production seal retainer [18] and bearing carrier pin [30] onto the lower bearing carrier [23].

SUBTASK 32-21-11-020-035

(13) Remove the dynamic seal guide [84] from the inner cylinder [12].

K. Inner Cylinder Components Assembly

SUBTASK 32-21-11-420-023

(1) Install the following items:

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(a) Install the lower centering cam [11] on the inner cylinder [12].

NOTE: There are two dowel pins loosely attached to the lower centering cam. These dowel pins must be aligned with the recesses inside the outer cylinder when you assemble the inner cylinder and outer cylinder assemblies in the subsequent steps. Align the centering cam dowel pins with the strut axle, or the gland nut lockable recesses on the outer cylinder to align the pins to the pin recesses. The dowel pins are designed to be loosely held in place with 0.005 in. (0.13 mm) - 0.015 in. (0.38 mm) dowel movement after the rivet is in place.

(b) Put the upper centering cam dowels [89] in position on the inner cylinder [12] (Figure 804).

1) Make sure that each dowel is centered and flush in it's centering cam groove.

NOTE: The dowels should also be positioned above the lip, on the inner cylinder, to allow the circlip to later move into it's installed position.

(c) Put the dowel retaining circlip [88] approximately mid-point on the dowels [89] to hold the dowels [89] in position on the inner cylinder [12].

(d) Install the upper centering cam [10] on the inner cylinder [12].

1) Carefully push the dowel retaining circlip [88] down the dowels [89], with the upper centering cam [10], until the dowels are in place in the upper centering cam [10].

NOTE: The dowel retaining circlip will snap over the bottom of the dowels into the circlip groove, that retains the dowels up inside the upper centering cam.

(e) Install the upper bearing assembly [8] and recoil valve [87] on the inner cylinder [12]:

1) Install the ring [86] on the recoil valve [87], if it was removed.

2) Install the recoil valve [87] and ring [86] on top of the upper centering cam [10].

3) Install the upper bearing halve [85] on the inner cylinder [12].

(f) Install the insert [8A] on the upper bearing halve [85].

1) Use hand pressure to make an overlap of ¼ in. (6.4 mm) to the insert [8A] to keep its round shape.

NOTE: This will keep the insert snug against the upper bearing halves.

2) Use the compressor assembly half [92] to hold the bearing closed during inner cylinder [12] installation.

SUBTASK 32-21-11-420-024

CAUTION

INSTALL THE COMPRESSOR ASSEMBLY BEFORE INSTALLATION OF THE INNER CYLINDER. DAMAGE TO THE THREADS OF THE OUTER CYLINDER AND THE UPPER BEARING ASSEMBLY CAN OCCUR WITHOUT THE TOOL.

(2) Install the compressor assembly half [92].

(a) Install the compressor assembly half [92], such that it fits at the bottom of the outer cylinder [9].

(b) Install the strap assembly [75] around the outer cylinder [9] and connect the ends to the shoulder bolts on the side of the compressor assembly half [92].

1) Tighten the strap assembly [75].

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SUBTASK 32-21-11-420-014

> **CAUTION**
> DO NOT LIFT THE AIRPLANE WITH THE AXLE JACK. DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Install the inner cylinder [12] in the outer cylinder [9]:

> **WARNING**
> MAKE SURE A MINIMUM OF TWO PERSONS WILL HOLD THE INNER CYLINDER WHEN YOU DO THE SUBSEQUENT STEPS. THE INNER CYLINDER IS HEAVY. INJURY TO PERSONS OR DAMAGE TO THE EQUIPMENT CAN OCCUR IF THE INNER CYLINDER IS NOT HELD PROPERLY.

> **CAUTION**
> BE CAREFUL NOT TO CAUSE DAMAGE TO THE INNER CYLINDER OR THE METERING PIN. DAMAGE TO THESE PARTS CAN CAUSE DAMAGE TO THE SEALS.

> **CAUTION**
> MAKE SURE THE DOWEL PINS ON THE LOWER CENTERING CAM ARE ALIGNED WITH THE RECESSES IN THE OUTER CYLINDER.

(a) Put the inner cylinder [12] in position to install in the outer cylinder [9].

NOTE: You can use the Centering Assembly C32016-35, or manually move the lower centering cam, to assist in aligning the lower centering cam dowel pins with the dowel pin recesses inside the outer cylinder. Align the dowel pins with the axle centerline or the gland nut tablock recesses on the outer cylinder.

(b) Manually lift the inner cylinder [12], into the outer cylinder [9], until the top edge of the chrome surface of the inner cylinder [12] is level with the lower surface of the compressor assembly compressor assembly half [92].

NOTE: Use great care in installing the inner cylinder into the outer cylinder to keep from damaging the lower bearing carrier dowel pins that are loosely riveted to the carrier, and are easily caused to be detached from the carrier if acted upon with much force.

(c) Use a floor jack to hold the inner cylinder [12] in position.

SUBTASK 32-21-11-080-004

(4) Remove the compressor assembly half [92]:

(a) Remove the strap assembly [75] from the outer cylinder [9] and compressor assembly half [92].

(b) Remove the compressor assembly half [92], from the outer cylinder [9].

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SUBTASK 32-21-11-420-025

> **CAUTION**
> MAKE SURE THAT THE DOWEL PINS ON THE LOWER CENTERING CAM ALIGN WITH THE GROOVES OF THE OUTER CYLINDER. IF NOT, DAMAGE CAN OCCUR.

(5) Carefully put the thread protector insert [77] between the outer cylinder [9] and inner cylinder [12].

NOTE: The tread protector insert will expand and press against the outer cylinder, this will protect the static seals from the gland nut threads on the outer cylinder.

SUBTASK 32-21-11-480-009

(6) Install the thread protector assembly [76]:

(a) Install the thread protector assembly [76], so that it fits at the bottom of the outer cylinder [9].

(b) Install the strap assembly [75] around the outer cylinder [9] and connect the ends to the shoulder bolts on the side of the thread protector assembly [76].

1) Tighten the strap assembly [75].

SUBTASK 32-21-11-480-010

(7) Install the seal puller assembly [73] around the inner cylinder [12] to support the bearing carrier.

NOTE: You do not need to install the two puller screws, as the inner cylinder will push on the seal puller assembly and lower bearing carrier as the inner cylinder is pushed into place. The two plastic skid plates can be placed up right between the bearing carrier and scraper lock assembly to provide extra height to move the bearing carrier up into the outer cylinder.

SUBTASK 32-21-11-580-008

> **CAUTION**
> MAKE SURE THAT YOU HAVE THE DOWEL PINS ON THE LOWER CENTERING CAM ALIGNED WITH THE RECESSES IN THE OUTER CYLINDER OR THE AXLE CENTERLINE. IF NOT ALIGNED, IT CAN CAUSE DAMAGE TO THE DOWEL PINS AND THE INNER CYLINDER.

(8) Use two people to lift the inner cylinder assembly until you feel the dowels of the lower centering cam engage the grooves in the outer cylinder [9].

(a) If it is necessary, with the lower centering cam dowel pins engaged in their recesses, use a jack to push on and fully seat the lower bearing carrier [23] in the outer cylinder [9].

(b) Make sure that the static seals and backup rings stay in their positions as the lower bearing carrier [23] is installed.

1) You may apply a thin layer of fluid, D00467, or AFS-682 lubricant, D00589, to the elastomer ring [19], cap seal [20], and backup ring [21] to aid in keeping the backup rings in position during installation.

NOTE: AFS-682 lubricant, D00589, will help keep the backup ring in its position.

NOTE: The material is a very thick, tacky material and a large quantity can make the bearing carrier hard to install.

2) Use the minimum quantity of AFS-682 lubricant, D00589, necessary to keep the parts in their positions.

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3) Remove unwanted AFS-682 lubricant, D00589.

NOTE: If you apply too much AFS-682 lubricant, D00589, this can cause problems with assembly of the components.

CAUTION

DO NOT LET THE INNER CYLINDER TO LOWER WITHOUT THE THREAD PROTECTOR INSTALLED. DAMAGE TO THE SEALS CAN OCCUR.

(c) Remove the thread protector assembly [76] when the lower surface of the lower bearing carrier [23], is aligned with the lower surface of the thread protector assembly [76].

NOTE: As you lift the inner cylinder, adjust the supporting jack to stay within ½ in. (13 mm) of the inner cylinder.

SUBTASK 32-21-11-020-019

(9) Remove the puller assembly and skid plates.

SUBTASK 32-21-11-020-020

(10) Remove the scraper retainer [79], and scraper lock scraper lock assembly, C32016-5 or -68, SPL-1379, from the gland nut [17].

SUBTASK 32-21-11-640-002

WARNING

DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(11) Apply a liberal amount of corrosion inhibiting material, G50136, to the threads of the gland nut [17] and to the threads of the outer cylinder [9].

SUBTASK 32-21-11-420-015

(12) Install the gland nut [17]:

(a) Apply a corrosion inhibiting material, G50136, to gland nut thread major and minor diameters and to the mating outer cylinder [9] thread major and minor diameters, plus the outer cylinder thread relief prior to assembly.

(b) Wipe off excess corrosion inhibiting material, G50136, from the gland nut [17] and outer cylinder [9] joint after the gland nut installation is completed.

(c) Move the gland nut [17] up on the inner cylinder [12] and engage the threads to the outer cylinder [9].

I (d) Use a gland nut wrench, SPL-1867, for the gland nut [17] to tighten the gland nut [17] to 100 ft-lb (136 N·m) - 125 ft-lb (169 N·m).

SUBTASK 32-21-11-420-016

(13) Install the lockplate [16] for the gland nut [17] (Figure 802):

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WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION AGAINST CORROSION INHIBITOR MATERIAL, G50136. IF CORROSION INHIBITOR MATERIAL, G50136 GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER AND GET MEDICAL AID. THIS MATERIAL CONTAINS VERY POISONOUS AND FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of corrosion inhibiting material, G50136, to the shank and threads of bolts [14] and washers [15].

(b) Install the lockplate [16] in the holes that will put the tab of the lockplate [16] as close as possible to a slot in the outer cylinder [9].

1) If it is necessary, loosen the gland nut [17] slightly to align lockplate [16] with the slot in the outer cylinder [9].

(c) Install the bolts [14] and washers [15].

(d) Tighten the bolts [14].

(e) Install MS20995C32 lockwire, G01048, on the bolts [14] (TASK 20-10-44-400-801).

SUBTASK 32-21-11-420-032

(14) Install components removed for access.

SUBTASK 32-21-11-420-026

(15) Connect the lower torsion link [49] to the inner cylinder [12]:

(a) Apply a thin layer of the corrosion inhibiting material, G50136, to these items:

1) The threads and thread reliefs of the torsion link pin [42]

2) The threads of the nut [51]

3) The faces of the washer [41]

4) The mating surfaces of the torsion link pin [42].

(b) Remove all unwanted corrosion preventive corrosion inhibiting material, G50136.

(c) Put the lower torsion link [49] in its position on the inner cylinder [12].

(d) Put the torsion link pin [42] through the lower torsion link [49] and inner cylinder [12].

(e) Install the washer [41] and nut [51] on the torsion link pin [42].

(f) Tighten the nut [51] to 250 in-lb (28 N·m) - 300 in-lb (34 N·m) more than the run-on torque.

(g) If it is necessary, loosen the nut [51] to the nearest castellation to align the holes for the cotter pin [52].

1) If there is no clearance, loosen the nut [51] to one more castellation and check again.

(h) Install the pin [52] in the torsion link pin [42].

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SUBTASK 32-21-11-980-002

> **CAUTION** DO NOT LIFT THE AIRPLANE NOSE OFF THE AIRPLANE NOSE JACK WHEN YOU MOVE THE INNER CYLINDER TO THE FULLY COMPRESSED POSITION. STOP MOVEMENT OF THE INNER CYLINDER IF THERE IS RESISTANCE. DAMAGE TO EQUIPMENT CAN OCCUR.

(16) If not fully compressed, use a jack to move the inner cylinder [12] from the fully extended to the fully compressed position.

NOTE: There is a total travel is 15.50 in. (39.4 cm) for a fully compressed strut.

SUBTASK 32-21-11-080-007

(17) Lower and remove the axle jack (TASK 07-11-06-580-803).

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-11-020-040

(18) Install and connect the taxi light wire harness [50] to the lower torsion link [49] and taxi light housing [57] as follows:

(a) Install the clamp to the inner cylinder [12] using the nut [47] and washer [48].

(b) Install the clamp to the taxi light housing [57] using the screw [46], washer [44], washer [45], and nut [43].

(c) Pull the wire harness [50] wires through the taxi light housing [57].

(d) Attach the electric harness backshell [60] to the housing thru fitting [59].

(e) Install the lockwire [64] from the electric harness backshell [60] to the head of the clamp screw [46].

SUBTASK 32-21-11-960-002

(19) Install the taxi light lamp as follows:

(a) Examine the gasket [63] and gasket [58], on the taxi light housing [57] and retainer [54].

1) If a gasket is damaged, replace it, gasket [58] or gasket [63].

2) Remove all dirt and corrosion from the ends of the electrical wires [61].

(b) Connect the electrical wires [61] to the lamp [55] using screw [62].

(c) Align the retainer [54] and lamp [55] against the housing.

> **CAUTION** MAKE SURE THAT THE RETAINER AND LAMP ARE ALIGNED. IF THE PARTS ARE NOT CORRECTLY ALIGNED, THE LAMP WILL BREAK WHEN YOU TIGHTEN THE SCREWS ON THE RETAINER.

(d) Install the screw [53].

LOM ALL

SUBTASK 32-21-11-410-002

(20) Install the wheels (TASK 32-45-21-400-801).

SUBTASK 32-21-11-080-006

(21) Lower the airplane nose and remove the jacks (TASK 07-11-21-580-802).

SUBTASK 32-21-11-420-017

(22) If removed, install the oil charging valve [6]:

(a) Remove and discard the old packing [7].

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(b) Apply a thin layer of fluid, D00467, on the new packing [7].

(c) Install the new packing [7] on the oil charging valve [6].

(d) Lubricate the fitting thread with fluid, D00467.

(e) Install the oil charging valve [6] and tighten it to 22 ft-lb (30 N·m) - 25 ft-lb (34 N·m).

(f) Install the cap assembly [5] loosely.

NOTE: You will tighten it in the Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

(g) Apply compound, A00226, to the oil charging valve [6].

NOTE: This will make sure that the seal made by the compound, A00226, must break if the valve becomes loose.

SUBTASK 32-21-11-710-004

(23) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
LOM 462-999			
B	14	C01968	EXTERIOR LIGHTING LTRTL - RIGHT
B	15	C01969	EXTERIOR LIGHTING LTRTL - LEFT
LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461			
D	14	C00123	EXT LIGHTING NOSE GEAR TAXI

LOM ALL

SUBTASK 32-21-11-600-002

(24) Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

SUBTASK 32-21-11-420-020

(25) Make sure that the swivel nut [3] is torqued to 5 ft-lb (7 N·m) - 7 ft-lb (9 N·m) and the cap assembly [1] is installed for the gas valve [2].

SUBTASK 32-21-11-710-005

(26) Do the following paragraphs of this task, do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801:

(a) General

(b) Prepare to Test the Steering System of the Nose Wheel

(c) Do the Centering Test

(d) Put the Airplane in its Usual Condition.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-11-710-008

(27) Do a test of the nose gear taxi light.

(a) Set the switch for the taxi light, on the P5 overhead panel, to the on mode.

1) Make sure that the light comes on.

(b) Set the switch for the taxi light, on the P5 overhead panel, to the off mode.

1) Make sure that the lamp goes off.

LOM ALL

END OF TASK

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TASK 32-21-11-960-803

4. Scraper Ring Replacement

(Figure 802, Figure 803)

A. General

(1) This task is used when the scraper ring is damaged and replacement is necessary but removal of the inner cylinder is not possible.

(2) It is acceptable to operate the aircraft with a missing section of the energizer ring or other damage to the scraper ring. The scraper ring should be replaced with a new solid scraper ring or split scraper ring at the earliest maintenance opportunity to avoid excessive damage to the dynamic seal. If you do not have a split scraper ring available, you can cut a solid scraper ring or the damaged scraper ring to re-install it.

NOTE: The installation of a split scraper ring is also a temporary repair and should be replaced when the nose landing gear is disassembled for other maintenance or overhaul.

B. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)
32-45-21-000-801	Nose Landing Gear Wheel and Tire Assembly - Removal (P/B 401)
32-45-21-400-801	Nose Landing Gear Wheel and Tire Assembly - Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1378	Scraper Retainer, C32016-4 or -67 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1379	Scraper Lock Assy, C32016-5 or -68 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205

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(Continued)

Reference	Description
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205
SPL-1867	Wrench - Gland Nut, Shock Strut NLG Part #: C32025-7 Supplier: 81205 Opt Part #: C32025-1 Supplier: 81205
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)

D. Consumable Materials

Reference	Description	Specification
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38

E. Location Zones

Zone	Area
711	Nose Landing Gear Door - Left

F. Prepare for the Replacement

SUBTASK 32-21-11-420-043

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-11-710-006

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-21-11-710-007

(3) Deflate the shock strut [4] for the nose landing gear.

(a) Remove the cap assembly [1] for the gas valve [2] that is on the top of the shock strut [4].

> **WARNING** DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(b) Loosen the swivel nut [3] a maximum of two turns.

NOTE: Fluid in the shock strut can have bubbles when you release the pressure.

1) Deflate the shock strut [4] slowly to prevent the leakage of the fluid through the gas valve [2].

(c) Loosen the swivel nut [3] fully when all of the pressure in the shock strut [4] is released.

NOTE: The shock strut is fully deflated when the dimension "X" is 13.9 in. (353 mm).

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SUBTASK 32-21-11-170-001

(4) Drain the hydraulic fluid from the shock strut [4].

(a) Remove the cap assembly [5] from the oil charging valve [6].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110, in a position to catch the hydraulic fluid when the oil charging valve [6] is opened.

(c) Install the drain equipment on the oil charging valve [6].

NOTE: The landing gear shock strut drain valve, SPL-1829, could also be used, but it will take much longer to drain the shock strut.

1) Cut a length of plastic tubing, sufficiently long to reach the container on the floor.

2) Insert a small allen wrench in the end of the length of tubing so that the long end of the allen wrench is flush with the end of the tube and the short end goes through the wall of the tube.

3) Install the tubing on the oil charging valve [6] so that the allen wrench goes into the check valve and holds it open to drain the hydraulic fluid.

(d) Remove the drain equipment when you have removed all of the hydraulic fluid.

SUBTASK 32-21-11-020-041

(5) Do this task: Nose Landing Gear Torsion Link Disconnection, TASK 32-21-31-000-803.

SUBTASK 32-21-11-580-013

(6) Lift the nose of the airplane until there is about five inches of chrome exposed (TASK 07-11-21-580-801).

SUBTASK 32-21-11-020-042

(7) Use an axle jack to hold the inner cylinder [12] in its position in the outer cylinder [9] (TASK 07-11-03-580-802).

SUBTASK 32-21-11-020-043

(8) Do this task: Nose Landing Gear Wheel and Tire Assembly - Removal, TASK 32-45-21-000-801.

G. Scraper Ring Replacement

SUBTASK 32-21-11-020-044

(1) Disconnect the gland nut [17] from the outer cylinder [9].

(a) Remove the bolts [14], washers [15], and lockplate [16] to release the gland nut [17].

I (b) Use a gland nut wrench, SPL-1867, to disconnect the gland nut [17] from the outer cylinder [9].

(c) Remove the scraper energizer from the gland nut [17].

CAUTION BE CAREFUL NOT TO CAUSE DAMAGE TO THE INNER CYLINDER OR THE METERING PIN. DAMAGE TO THESE PARTS CAN CAUSE DAMAGE TO THE SEALS.

(d) Remove the damaged scraper ring [24] from the gland nut [17].

(e) Install the wave cut scraper ring [24] on the inner cylinder [12] and slide it into the gland nut [17].

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SUBTASK 32-21-11-420-033

(2) If it is necessary, install the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) and scraper lock assembly [74] (scraper lock assembly, C32016-5 or -68, SPL-1379) on the gland nut [17].

NOTE: This will make sure that the scraper ring for the gland nut does not come out of its groove.

(a) Install the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) on the gland nut [17].

(b) Install the scraper lock assembly [74] (scraper lock assembly, C32016-5 or -68, SPL-1379) to hold the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) in its position on the gland nut [17].

SUBTASK 32-21-11-600-003

WARNING

DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) Apply a thin layer of corrosion inhibiting material, G50136, to the threads of the gland nut [17] and to the threads of the outer cylinder [9].

SUBTASK 32-21-11-020-045

(4) If installed, remove the scraper retainer [79] (scraper retainer, C32016-4 or -67, SPL-1378) and scraper lock assembly [74] (scraper lock assembly, C32016-5 or -68, SPL-1379) from the gland nut [17].

SUBTASK 32-21-11-420-034

(5) Install the gland nut [17].

(a) Move the gland nut [17] up to the outer cylinder [9] and engage the threads.

(b) Use a gland nut wrench, SPL-1867, for the gland nut [17] to tighten the gland nut to 100 ft-lb (136 N·m) - 125 ft-lb (169 N·m).

SUBTASK 32-21-11-420-035

(6) Install the lockplate [16] for the gland nut [17] (Figure 802).

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION AGAINST CORROSION INHIBITOR MATERIAL, G50136. IF CORROSION INHIBITOR MATERIAL, G50136 GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER AND GET MEDICAL AID. THIS MATERIAL CONTAINS VERY POISONOUS AND FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of corrosion inhibiting material, G50136, to the shank and threads of bolts [14] and washers [15].

(b) Install the lockplate [16] in the holes that will put the tab of the lockplate [16] as close as possible to a slot in the outer cylinder [9].

1) If it is necessary, loosen the gland nut [17] slightly to align lockplate [16] with the slot in the outer cylinder [9].

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(c) Install the bolts [14] and washers [15].

(d) Tighten the bolts [14].

(e) Install MS20995C32 lockwire, G01048, on the bolts [14] (TASK 20-10-44-400-801).

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-11-420-036

(1) Install the cap assembly [5] loosely.

NOTE: You will tighten it in the shock strut servicing task.

SUBTASK 32-21-11-410-003

(2) Do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, TASK 32-45-21-400-801.

SUBTASK 32-21-11-580-015

(3) Lower the airplane nose and remove the jacks (TASK 07-11-21-580-802).

SUBTASK 32-21-11-580-016

(4) Do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

SUBTASK 32-21-11-420-037

(5) Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

SUBTASK 32-21-11-420-038

(6) Make sure that the swivel nut [3] is tightened to 5 ft-lb (7 N·m) - 7 ft-lb (9 N·m).

SUBTASK 32-21-11-420-039

(7) Make sure that the cap assembly [1] is installed for the gas valve [2].

——— END OF TASK ———

TASK 32-21-11-200-801

5. Nose Landing Gear Shock Strut Seal Leakage Check

(Figure 801, Figure 802, Figure 803)

A. General

(1) This task gives the instructions to make sure that a shock strut is serviceable when you find fluid leakage on the inner cylinder.

NOTE: During the initial landing cycles of a new landing gear it is usual to have hydraulic fluid streaks on the shock strut. These streaks are caused by hydraulic fluid applied to the shock strut seals during seal installation and will stop after more landing cycles occur. These streaks are different from the actual continuous drips that are the indication of shock strut seal leakage.

B. References

Reference	Title
05-51-37-200-806	Phase I Inspection (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
09-11-00-580-801	Maintenance Towing (P/B 201)
12-15-41-610-801	Nose Landing Gear Shock Strut Fluid Check (P/B 301)
12-21-21-640-802	Nose Landing Gear Lower End Components Servicing (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

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C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
711	Nose Landing Gear Door - Left

D. Shock Strut Seal Leak Inspection

NOTE: If the inspection finds a fault on the scraper ring you must replace the damaged scraper ring.

NOTE: The inner cylinder must be removed from the outer cylinder shock strut to replace the scraper ring.

SUBTASK 32-21-11-480-004

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-11-210-001

(2) Inspect the shock struts for leakage.

SUBTASK 32-21-11-210-002

(3) If you find leakage of the shock strut fluid on the inner cylinder, do the steps that follow to make sure that the shock strut is serviceable:

(a) Check for leaks for 5 minutes:

1) Wipe the surface of the inner cylinder with a clean cloth to remove all of the fluid from the leak.

2) Monitor the inner cylinder where it touches the outer cylinder for 5 minutes.

NOTE: Make sure that the extension of the inner cylinder does not change during this time.

3) Make a record of the location and the number of drops which come from the seals during the 5 minutes.

(b) Tow the airplane to cause movement between the inner cylinder and the outer cylinder, do this task: Maintenance Towing, TASK 09-11-00-580-801.

NOTE: The minimum distance the airplane must be moved is two airplane lengths.

(c) Check for leaks for 5 minutes:

1) Wipe the surface of the inner cylinder with a clean cloth to remove all of the fluid from the leak.

2) Monitor the inner cylinder where it touches the outer cylinder for 5 minutes.

NOTE: Make sure that the extension of the inner cylinder does not change during this time.

3) Make a record of the location and the number of drops which come from the seals during the 5 minutes.

(d) Calculate the average of the number of drops which came from the seals during both of the 5 minute measurements.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-11-210-003

(4) If the leakage stopped, do the steps that follow:

(a) Continue to monitor the strut for leakage on subsequent landings.

1) If you see more signs of leakage, do the entire leak check procedure again.

a) If you find a continuous leakage flow on subsequent landings, the shock strut [4] is not serviceable.

CAUTION	IF THE AIRPLANE MADE A LANDING WITH A DEFLATED OR FLAT STRUT, DO THE HARD LANDING INSPECTION. MAKE SURE THAT NO DAMAGE OCCURRED. A DEFLATED OR FLAT STRUT CAN CAUSE DAMAGE DURING A LANDING.

2) If you do not find leakage on subsequent landings, continue to examine the fluid level of the shock strut [4].

a) You must examine the fluid level in less than 3 days or 10 flight cycles, (Nose Landing Gear Shock Strut Fluid Check, TASK 12-15-41-610-801).

b) If the nose landing gear shock strut [4] has low pressure or is deflated, do this task: Phase I Inspection, TASK 05-51-37-200-806.

SUBTASK 32-21-11-210-004

(5) If there was leakage but the average was less than 20 drops during the two 5 minute periods, do the steps that follow:

NOTE: 20 drops is equal to 1.0 cc.

(a) Continue to monitor the strut for leakage on subsequent landings until you replace the seals.

1) If the leakage continues or increases, do the entire seal leak check procedure again.

CAUTION	IF THE AIRPLANE MADE A LANDING WITH A DEFLATED OR FLAT STRUT, DO THE HARD LANDING INSPECTION. MAKE SURE THAT NO DAMAGE OCCURRED. A DEFLATED OR FLAT STRUT CAN CAUSE DAMAGE DURING A LANDING.

(b) If you do not find leakage on subsequent landings, examine the fluid level of the shock strut within 3 days or 10 flight cycles, (TASK 12-15-41-610-801).

1) If the nose landing gear shock strut has low pressure or is deflated, do this task: Phase I Inspection, TASK 05-51-37-200-806.

(c) Continue to monitor the fluid level of the shock strut at no more than 3 day or 10 flight cycle intervals, until you replace the seals, (TASK 12-15-41-610-801).

SUBTASK 32-21-11-210-005

(6) If the average leakage was more than 20 drops during the two 5 minute periods, but was not continuous, do the steps that follow:

NOTE: 20 drops is equal to 1.0 cc.

CAUTION	IF THE AIRPLANE MADE A LANDING WITH A DEFLATED OR FLAT STRUT, DO THE HARD LANDING INSPECTION. MAKE SURE THAT NO DAMAGE OCCURRED. A DEFLATED OR FLAT STRUT CAN CAUSE DAMAGE DURING A LANDING.

(a) Do this task: Nose Landing Gear Shock Strut Fluid Check, TASK 12-15-41-610-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) If the nose landing gear shock strut has low pressure or is deflated, do this task: Phase I Inspection, TASK 05-51-37-200-806.

(b) Continue to monitor the fluid level of the shock strut after each flight until you replace the seals.

SUBTASK 32-21-11-210-006

(7) If the fluid leaked continuously during the 5 minute period, the shock strut is not serviceable and you must replace the shock strut seals.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-11-580-009

(1) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-21-11-640-003

(2) Apply the lubricant to the lubrication fittings on the upper torsion link [13] and the collar assembly, do this task: Nose Landing Gear Lower End Components Servicing, TASK 12-21-21-640-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR TOW FITTING - REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks. The first task removes the tow fitting from the nose landing gear. The second task installs the tow fitting on the nose landing gear.

TASK 32-21-14-000-801

2. Nose Landing Gear Tow Fitting Removal

A. References

Reference	Title
32-00-01 P/B 201	LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES

B. Location Zones

Zone	Area
713	Nose Landing Gear

C. General

SUBTASK 32-21-14-020-001

(1) This procedure supplies instructions to remove the tow fitting assembly [11].

D. Prepare for the Removal of the Tow Fitting

SUBTASK 32-21-14-480-001

WARNING MAKE CERTAIN LANDING GEAR DOWNLOCK PINS ARE INSTALLED TO PREVENT INADVERTENT RETRACTION OF LANDING GEAR, WITH POSSIBLE INJURY TO PERSONNEL.

(1) Make sure the downlocks are installed on the nose and main landing gear (LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES, PAGEBLOCK 32-00-01/201).

E. Nose Gear Tow Fitting Removal

SUBTASK 32-21-14-020-002

(1) Remove these parts:

(a) The cotter pins (if installed)

(b) The nuts [9]

(c) The washers [10]

(d) The bolts [3] and the washers [4].

SUBTASK 32-21-14-020-003

(2) If removal of the tow fitting bolt is necessary, remove these parts:

(a) The pin [7]

(b) The nut [6]

(c) The washer [5]

(d) The bolt [1] and the washer [2].

SUBTASK 32-21-14-020-004

(3) Remove the tow fitting assembly [11] from the inner cylinder assembly.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Tow Fitting Installation
Figure 401/32-21-14-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-14-400-801

3. Nose Landing Gear Tow Fitting Installation

Figure 401

A. Consumable Materials

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

B. Location Zones

Zone	Area
713	Nose Landing Gear

C. General

SUBTASK 32-21-14-400-001

(1) This procedure supplies instructions to install the tow fitting (tow fitting assembly [11]) and tow fitting bolt.

D. Nose Gear Tow Fitting and Tow Fitting Bolt Installation

SUBTASK 32-21-14-916-001

(1) If the tow fitting bolt [1] installation is necessary, do these steps:

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin coat of Cor-Ban 27L Compound, G50237 or corrosion inhibiting material, G50136 (alternate) to the shank of the unplated bolt, bolt threads and thread reliefs of the bolt [1], and to the faces of the washer [2] and washer [5] prior to installation. Wipe off the excess.

(b) Insert the tow fitting bolt [1] into the washer [2] and then into the tow fitting assembly [11].

(c) Install the washer [5] and the nut [6] to connect the tow fitting bolt [1] to the tow fitting assembly [11].

(d) Tighten the nut to 160 in-lb (18 N·m) to 190 in-lb (21 N·m) above run-on torque and back off to align the nearest castellation.

(e) Install the pin [7].

(f) Lubricate the two lube fittings [12] with grease, D00633, or alternate grease, D00013.

SUBTASK 32-21-14-916-002

(2) Do the steps that follow to install the tow fitting assembly [11] on the inner cylinder assembly:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin coat of Cor-Ban 27L Compound, G50237 or corrosion inhibiting material, G50136 (alternate) to the shank of the unplated bolts [3], the bolt threads and bolt reliefs, and to the faces of the washer [4] and washer [10] prior to installation. Wipe off the excess Cor-Ban 27L Compound, G50237.

(b) Hold the tow fitting assembly [11] in position.

(c) Install the bolts [3] into the washers [4] and then into the tow fitting assembly [11].

(d) Install the washers [10], the nuts [9] to the bolts [3].

(e) Install self-locking nuts [9] and tighten the nuts [9] to within the torque range of 250 in-lb (28 N·m) to 300 in-lb (34 N·m) above the run-on torque.

NOTE: If installation had a cotter pin, the cotter pin may be discarded. Do not back-off the self locking nuts after torquing.

NOTE: The Aircraft Illustrated Parts Catalog (AIPC) lists bolts and nuts which are acceptable for use in the tow fitting to outer cylinder installation, however for best results use non-castellated nuts and bolts without cotter pin holes for the installation.

NOTE: If a BACN10JC self-locking nut is used on a bolt that has a hole for a cotter pin, it is recommended that the nut not be used again after removal. The edges of the hole will make the self-locking feature unserviceable.

E. Put the airplane back to its usual condition.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR DRAG STRUT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the drag strut for the nose landing gear

(2) An installation of the drag strut for the nose landing gear.

TASK 32-21-21-000-801

2. Nose Landing Gear Drag Strut Removal

(Figure 401 or Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-33-52-000-801	Nose Gear Lock Spring Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1871	Retention Straps - Shock Strut, NLG/MLG Part #: C32030 -31 Supplier: 81205 Opt Part #: C32030-10 Supplier: 81205
SPL-14478	Drag Strut Trun Pin Puller Assy, C32033-5 (included in C32033 Eqpt) Part #: C32033-1 Supplier: 81205
SPL-14479	Slide Hammer, C32033-22, with Slide Screw, C32033-21 (included in C32033 Eqpt) Part #: C32033-1 Supplier: 81205

C. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
713	Nose Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for the Removal

SUBTASK 32-21-21-420-012

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-21-580-001

(2) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

NOTE: Lower the jack that supports the tail of the airplane while you lift the nose landing gear.

SUBTASK 32-21-21-580-002

(3) If it is necessary to lift the gear with an axle jack to reduce the weight of the gear when you remove the right trunnion pin [1] and left trunnion pin [2], do this task: Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E, TASK 07-11-03-580-802.

SUBTASK 32-21-21-860-001

(4) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-21-21-860-002

(5) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461			
D	14	C00123	EXT LIGHTING NOSE GEAR TAXI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
LOM ALL			
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
D	17	C01027	LANDING GEAR NOSE GEAR STEER
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-21-21-480-002

(6) Install chocks around the tires of all the landing gear (PAGEBLOCK 10-11-05/201).

SUBTASK 32-21-21-020-001

(7) Do this task: Nose Gear Lock Spring Removal, TASK 32-33-52-000-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-21-080-001

(8) Remove the downlock pin for the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

E. Nose Landing Gear Drag Strut Removal

SUBTASK 32-21-21-020-002

(1) If necessary, disconnect the hydraulic hose connection from the rod end of the retract actuator [3].

NOTE: These steps are only necessary if the retract actuator will be removed.

(a) Disconnect the hydraulic UP-hose at the bracket on the retract actuator [3].

(b) Disconnect the hydraulic DOWN-hose at the fitting on the retract actuator [3].

(c) Install the caps on the hydraulic hoses and fittings on the retract actuator [3].

LOM ALL; AIRPLANES WITH OLD PIN ASSEMBLIES

SUBTASK 32-21-21-020-003

(2) Disconnect the rod end of the retract actuator [3].

(a) Remove the cotter pin [50] from the bolt [16].

(b) Remove the nut [12] and washer [14] from the bolt [16].

(c) Remove the bolt [16] from the pin [9].

(d) Remove the nut [15] and washer [11] from the pin [9].

(e) Remove the pin [9] that holds the rod end of the retract actuator [3] and washers [18] from the upper drag strut [17].

LOM ALL; AIRPLANES WITH NEW PIN ASSEMBLIES

SUBTASK 32-21-21-020-014

(3) Disconnect the rod end of the retract actuator [3].

(a) Remove the nuts [46], washers [45], washers [44], bolts [43], and retainer [47] from the pin [48].

(b) Remove the pin [48] that holds the rod end of the retract actuator [3] and washers [18] from the upper drag strut [17].

LOM ALL

SUBTASK 32-21-21-020-004

(4) Disconnect the forward lock link [20].

NOTE: This step will also disconnect the lower drag strut from the upper drag strut.

(a) Remove the cotter pin [13] from the bolt [22].

(b) Remove the nut [25] and washer [24] from the bolt [22].

(c) Remove the bolt [22] from the pin [19].

(d) Remove the nut [23] and washer [21] from the pin [19].

(e) Remove the pin [19] to disconnect the forward lock link [20] from the upper drag strut [17] and lower drag strut [10].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-21-020-005

WARNING MAKE SURE THAT YOU FULLY EXTEND THE SHOCK STRUT FOR THE NOSE LANDING GEAR BEFORE YOU DISCONNECT THE DRAG STRUT. IF YOU DO NOT FULLY EXTEND THE SHOCK STRUT, IT CAN MOVE QUICKLY AND CAN CAUSE INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Disconnect the lower drag strut [10] from the shock strut [29].

(a) Remove the cotter pin [26] from the bolt [28].

(b) Remove the nut [33] and washer [32] from the bolt [28].

(c) Remove the bolt [28] from the pin [30].

(d) Remove the nut [27] and washer [31] from the pin [30].

(e) Remove the pin [30] that holds the lower drag strut [10] from the shock strut [29].

SUBTASK 32-21-21-480-003

(6) Use the retention strap, SPL-1871, to hold the shock strut [29] in the compressed position.

SUBTASK 32-21-21-020-006

(7) Disconnect the upper drag strut [17] from the bracket [51].

NOTE: This step will also remove the bracket, that contains the down position sensor target. Keep the bracket for the installation procedure.

(a) Remove the nut [34] and washer [35] from the bolt [36].

(b) Remove the bolt [36] and washer [35] to disconnect the upper drag strut [17] from the bracket [51].

(c) Remove the washer [35] from the bolt [36].

SUBTASK 32-21-21-020-007

(8) Remove the right trunnion pin [1] and left trunnion pin [2].

(a) Remove the cotter pin [38] from the bolt [40].

(b) Remove the nut [37] and washer [39] from bolt [40].

(c) Remove the bolt [40] that hold the right trunnion pin [1] and left trunnion pin [2] to the sidewall of the nose wheel well.

(d) Remove the right trunnion pin [1] and left trunnion pin [2] to disconnect the upper drag strut [17] from the sidewall of the nose wheel well.

NOTE: Use the Drag Strut Trunnion Pin puller, C32033-5, SPL-14478, and slide hammer, C32033-22, with slide screw, C32033-21, SPL-14479, to remove the trunnion pins from inboard side of the upper drag strut.

LOM ALL; AIRPLANES WITH PACKING PART NUMBER MS29513-031 OR MS29513-033

(e) Remove and discard the packing [42].

LOM ALL

SUBTASK 32-21-21-020-008

(9) Remove the upper drag strut [17] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G27830 S0006575018_V2

Nose Landing Gear Drag Strut Installation
Figure 401/32-21-21-990-801 (Sheet 1 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 IF INSTALLED

G27832 S0006575019_V5

Nose Landing Gear Drag Strut Installation
Figure 401/32-21-21-990-801 (Sheet 2 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2944615 S0000721240_V2

Nose Landing Gear Drag Strut Installation
Figure 401/32-21-21-990-801 (Sheet 3 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C

G27834 S0006575020_V3

Nose Landing Gear Drag Strut Installation
Figure 401/32-21-21-990-801 (Sheet 4 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G27837 S0006575021_V3

Nose Landing Gear Drag Strut Installation
Figure 401/32-21-21-990-801 (Sheet 5 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

UPPER DRAG STRUT
(RIGHT SIDE IS SHOWN, LEFT SIDE IS EQUIVALENT)

F

G27839 S0006575022_V7

Nose Landing Gear Drag Strut Installation
Figure 401/32-21-21-990-801 (Sheet 6 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

UPPER DRAG STRUT
(RIGHT SIDE IS SHOWN, LEFT SIDE IS EQUIVALENT)

F

2973674 S0000752853_V2

Nose Landing Gear Drag Strut Installation
Figure 401/32-21-21-990-801 (Sheet 7 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2387744 S0000548478_V1

Drag Strut Trunnion Pin Removal and Installation Equipment
Figure 402/32-21-21-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-21-400-801

3. **Nose Landing Gear Drag Strut Installation**

(Figure 401 or Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-21-21-640-801	Nose Landing Gear Upper End Components Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-33-00-710-801	Operational Test for the Nose Landing Gear (P/B 501)
32-33-00-710-802	Nose Landing Gear Test - Component Replacement (P/B 501)
32-33-52-400-801	Nose Gear Lock Spring Installation (P/B 401)
32-35-00-730-801	Nose Gear Manual Extension System Test - Airplane on Jacks (P/B 501)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
32-61-51-400-801	Nose Landing Gear Down Position Sensor Clearance Adjustment (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-14480	Drag Strut Align Slug, C32033-4 (included in C32033 Eqpt) Part #: C32033-1 Supplier: 81205
SPL-14481	Removal/Installation Equipment - Trunnion Pin, NLG Part #: C32033-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
13	Pin	32-21-21-02-075	LOM ALL
26	Pin	32-21-00-02-005	LOM ALL
38	Pin	32-21-21-02-005	LOM ALL
42	Packing	32-21-21-02-022	LOM 416, 420, 422-434, 437-447, 450-999
		53-14-51-01A-500	LOM 406
		53-14-51-01A-645	LOM 402, 406, 407, 412, 415

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
50	Pin	32-33-11-01-017	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424

E. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
713	Nose Landing Gear

F. Prepare for the Installation

SUBTASK 32-21-21-620-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(1) Apply a thin layer of corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The shank and the threads of the bolts [40].

1) Apply a thick layer of the compound to the bolts [40].

(b) The threads and thread reliefs of the nuts [37].

(c) The faces of the washers [39].

(d) The cotter pin [38].

SUBTASK 32-21-21-160-001

(2) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136.

SUBTASK 32-21-21-640-001

(3) Lubricate the chrome plated surfaces of the right trunnion pin [1] and left trunnion pin [2] with grease, D00633.

SUBTASK 32-21-21-160-002

(4) Remove all unwanted grease, D00633.

G. Nose Landing Gear Drag Strut Installation

SUBTASK 32-21-21-560-001

(1) Put the upper drag strut [17] in its position for installation on the sidewall of the nose wheel well.

SUBTASK 32-21-21-580-003

(2) Align the upper drag strut [17] with the mating hole in the sidewall of the nose wheel well.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-21-420-001

(3) Install the right trunnion pin [1] and left trunnion pin [2].

(a) Make sure that the trunnion pin seal [41] is installed in the trunnion pin.

LOM ALL; AIRPLANES WITH PACKING PART NUMBER MS29513-031 OR MS29513-033

(b) Apply grease, D00633, to the new packing [42].

(c) Install the packing [42] inside the nose wheel well drag brace bushing.

LOM ALL

(d) Use the Drag Strut alignment slug, C32033-4, SPL-14480, to align the upper drag strut [17] and sidewall of the nose wheel well.

(e) Put the right trunnion pin [1] and left trunnion pin [2] through the upper drag strut [17] and sidewall of the nose wheel well.

1) Make sure that the hole in the right trunnion pin [1] and left trunnion pin [2] for the bolts [40] are aligned.

a) Use the nose landing gear trunnion pin alignment pin assembly, SPL-14481.

(f) Put the bolt [40] through the right trunnion pin [1] and left trunnion pin [2].

(g) Install the washer [39] and nut [37] on the bolt [40].

(h) Tighten the nut [37] to 20 in-lb (2.3 N·m) - 24 in-lb (2.7 N·m) more than the run-on torque.

(i) If it is necessary, loosen the nut [37] to the nearest castellation to align the holes for the cotter pin [38].

(j) Install the cotter pin [38] in the bolt [40].

(k) Rotate seal [41] as required to fully seat seal against crossbolt.

CAUTION	WEAR SAFETY GLASSES DURING APPLICATION, AND IF APPLICATION OF SOLVENT RESULTS IN IRRITATION, USE AN AIR PURIFYING ORGANIC VAPOR CARTRIDGE RESPIRATOR. USE NITRILE GLOVES AND WASH YOUR HANDS WITH MOISTURE CREAM AFTER APPLICATION. STORE DPM 6380-4 CLEANER/SOLVENT IN FLAMMABLE RESISTANT CONTAINERS IN QUANTITIES NO LARGER THAN 1 GALLON.

(l) Reapply Cor-Ban 27L Compound, G50237, as required to coat the interior surface of the trunnion pin.

SUBTASK 32-21-21-420-002

(4) Connect the upper drag strut [17] to the bracket [51].

(a) Put the washer [35] on the bolt [36].

(b) Align the hole in the upper drag strut [17] to the hole in the bracket [51].

(c) Put the bolt [36] through the bracket [51] and upper drag strut [17].

(d) Install the washer [35] and nut [34] on the bolt [36].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-21-620-002

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	MAKE SURE THAT YOU REMOVE UNWANTED CORROSION INHIBITING COMPOUND FROM SURFACES THAT YOU WILL LUBRICATE. IF YOU APPLY CORROSION INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT COULD OCCUR.

(5) Apply a thin layer of corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The threads and thread reliefs of the pin [30] and bolt [28].

(b) The threads of the nut [27] and nut [33].

(c) The faces of the washers [31] and washer [32].

(d) The cotter pin [26].

SUBTASK 32-21-21-160-003

(6) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136.

SUBTASK 32-21-21-640-002

(7) Lubricate the shank of the pin [30] and bolt [28] with grease, D00633.

SUBTASK 32-21-21-160-004

(8) Remove all unwanted grease, D00633.

SUBTASK 32-21-21-420-003

(9) Connect the lower drag strut [10].

(a) Make sure that the drag brace lubrication fittings are on the right side when looking forward.

(b) Put the lower drag strut [10] in its position on the shock strut [29].

(c) Put the pin [30] through the shock strut [29] and lower drag strut [10].

(d) Install the washer [31] and nut [27] on the pin [30].

(e) Tighten the nut [27] to 600 in-lb (67.8 N·m) - 700 in-lb (79.1 N·m).

(f) Loosen the nut [27] to the nearest castellation to align the holes for the bolt [28].

(g) Install the bolt [28] in the pin [30].

(h) Install the washer [32] on the bolt [28].

(i) Install the nut [33] on the bolt [28].

(j) If it is necessary, loosen the nut [33] to the nearest castellation to align the holes for the cotter pin [26].

(k) Install the cotter pin [26] in the bolt [28].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-21-620-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(10) Apply a thin layer of corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The threads and thread reliefs of the pin [19] and bolt [22].

(b) The threads of the nut [23] and nut [25].

(c) The faces of the washers [21] and washer [24].

(d) The cotter pin [13].

SUBTASK 32-21-21-160-005

(11) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136.

SUBTASK 32-21-21-420-009

(12) If nut and bolt is installed in the downlock pin hole, remove it and install a downlock pin in that location.

SUBTASK 32-21-21-420-004

(13) Connect the forward lock link [20] and lower drag strut [10].

NOTE: This step will also connect the lower drag strut to the upper drag strut.

(a) Put the lower drag strut [10] and forward lock link [20] in their positions on the upper drag strut [17].

(b) Put the pin [19] through the forward lock link [20], upper drag strut [17], and lower drag strut [10].

(c) Install the washer [21] and nut [23] on the pin [19].

(d) Tighten the nut [23] to 95 in-lb (10.7 N·m) - 115 in-lb (13.0 N·m) more than the run-on torque.

(e) Loosen the nut [23] to the nearest castellation to align the hole for the bolt [22].

(f) Install the bolt [22] in the pin [19].

(g) Install the washer [24] and nut [25] on the bolt [22].

(h) If it is necessary, loosen the nut [25] to the nearest castellation to align the holes for the cotter pin [13].

(i) Install the cotter pin [13] in the bolt [22].

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LOM ALL; AIRPLANES WITH OLD PIN ASSEMBLIES

SUBTASK 32-21-21-420-011

(14) If the retract actuator was removed, hold the retract actuator [3] and do these steps to connect the actuator to the upper drag strut [17].

(a) Put the rod end of the retract actuator [3] and washers [18] in their position on the upper drag strut [17].

(b) Put the pin [9] through the upper drag strut [17], rod end of the retract actuator [3], and washers [18].

(c) Install the washer [11] and castellated nut [15] on the pin [9].

(d) Tighten the nut [15] to 50 ft-lb (67.8 N·m) - 58 ft-lb (78.6 N·m).

(e) If it is necessary, loosen the nut [15] to the nearest castellation to align the hole for the bolt [16].

(f) Install the bolt [16] in the pin [9].

(g) Install the washer [14] and nut [12].

(h) If it is necessary, loosen the nut [12] to the nearest castellation to align the hole for the cotter pin [50].

(i) Install the cotter pin [50] in the bolt [16].

LOM ALL; AIRPLANES WITH NEW PIN ASSEMBLIES

SUBTASK 32-21-21-420-008

(15) If the retract actuator was removed, hold the retract actuator [3] and do these steps to connect the actuator to the upper drag strut [17].

(a) Put the rod end of the retract actuator [3] and washers [18] in their position on the upper drag strut [17].

(b) Put the pin [48] through the upper drag strut [17], rod end of the retract actuator [3], and washers [18].

(c) Install the retainer [47] with the flat surface touching the upper drag strut [17] on the pin [48].

(d) Install the bolts [43], washers [44], washers [45], and nuts [46] on the retainer [47].

LOM ALL

SUBTASK 32-21-21-080-002

(16) If they were installed, remove the caps from the hydraulic hoses.

SUBTASK 32-21-21-420-006

(17) If the retract actuator was removed, connect the hydraulic hoses to the retract actuator [3].

SUBTASK 32-21-21-720-001

(18) Do a post installation check of the nose landing gear down position sensor (TASK 32-61-51-400-801).

NOTE: This step is necessary because the bracket, that contains the down position sensor target, was removed.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-21-420-007

(1) Do this task: Nose Gear Lock Spring Installation, TASK 32-33-52-400-801.

SUBTASK 32-21-21-610-001

(2) Lubricate the upper components of the nose landing gear (TASK 12-21-21-640-801).

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SUBTASK 32-21-21-860-005

(3) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461			
D	14	C00123	EXT LIGHTING NOSE GEAR TAXI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
LOM ALL			
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	15	C01401	LANDING GEAR AIR/GND RELAY
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
D	17	C01027	LANDING GEAR NOSE GEAR STEER
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-21-21-860-003

(4) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-21-21-710-001

(5) Do this task: Operational Test for the Nose Landing Gear, TASK 32-33-00-710-801.

NOTE: If a hydraulic cart is not available, it is optional to perform the Nose Landing Gear Test - Component Replacement, TASK 32-33-00-710-802 instead of the operational test.

SUBTASK 32-21-21-710-002

(6) Do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, TASK 32-35-00-730-801.

SUBTASK 32-21-21-710-003

(7) Do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801.

SUBTASK 32-21-21-860-004

(8) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

END OF TASK

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NOSE LANDING GEAR DRAG STRUT - INSPECTION/CHECK

1. General

A. This task is a visual inspection of the upper drag strut of the nose landing gear.

B. This task does not remove or install the drag strut. Refer to the Nose Landing Gear Drag Strut - Removal/Installation for procedures to remove and install the drag strut of the nose landing gear.

TASK 32-21-21-200-801

2. Nose Landing Gear Drag Strut Inspection

A. General

(1) This procedure give wear limits and repair data for the drag strut of the nose landing gear.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-21-000-801	Nose Landing Gear Drag Strut Removal (P/B 401)
SRM 53-10-90	Allowable Damage 1

C. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
713	Nose Landing Gear

D. Procedure

SUBTASK 32-21-21-480-004

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-21-020-009

(2) Examine the upper drag brace bushings for these forms of damage:

NOTE: It is not necessary to remove the nose landing gear drag brace strut assembly for a visual inspection for the following conditions:

(a) corrosion

(b) cracks in bushing or fillet seal

(c) scratches along the rim of the bushing

SUBTASK 32-21-21-410-001

(3) Use a feeler gage to check for 0.156 in. (3.962 mm) to 0.200 in. (5.080 mm) clearance between the structure support bushings and the nose landing gear drag strut upper trunnion bushings assemblies.

NOTE: To have satisfactory results the feeler gage must display smooth transition while being installed or removed.

(a) If the feeler gage can be installed and removed without force the check is satisfactory.

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(b) If the check is satisfactory, put the airplane back to its usual condition.

(c) If the bushing display damage or smooth transition of the feeler gage can not be satisfied, do this task: Nose Landing Gear Drag Strut Removal, TASK 32-21-21-000-801.

SUBTASK 32-21-21-200-001

(4) Refer to SRM 53-10-90 for the inspection and removal of damage to the nose landing gear drag strut fittings.

——— END OF TASK ———

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NLG SHOCK STRUT INNER CYLINDER - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the inner cylinder for the nose landing gear

(2) An installation of the inner cylinder for the nose landing gear

TASK 32-21-24-000-801

2. NLG Inner Cylinder Removal

(Figure 401)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-14-000-801	Nose Landing Gear Tow Fitting Removal (P/B 401)
32-21-31-000-802	Nose Landing Gear Lower Torsion Link Removal (P/B 401)
32-45-21-000-801	Nose Landing Gear Wheel and Tire Assembly - Removal (P/B 401)
33-45-01 P/B 201	TAXI LIGHT - MAINTENANCE PRACTICES

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1376	Scraper Plunger, C32016-2 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1377	Scraper Reducer, C32016-3 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1378	Scraper Retainer, C32016-4 or -67 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1379	Scraper Lock Assy, C32016-5 or -68 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1829	Oil Drain Valve - Shock Strut, LG Part #: J32108-16 Supplier: 81205 Opt Part #: A32066-1 Supplier: 81205

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(Continued)

Reference	Description
SPL-1867	Wrench - Gland Nut, Shock Strut NLG Part #: C32025-7 Supplier: 81205 Opt Part #: C32025-1 Supplier: 81205
SPL-1895	Removal/Installation Equipment - Metering Pin and Retainer Ring, NLG Part #: C32035-1 Supplier: 81205
SPL-3927	Strap Assy, C32017-60 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205
SPL-4047	Seal Puller Assy, C32016-6 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
STD-1110	Container - Hydraulic Fluid Resistant, 5 Gallon (19 Liter)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
21	Scraper ring	32-21-00-01A-195	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Prepare for the Removal

SUBTASK 32-21-24-480-001

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the Nose Landing Gear (NLG) and Main Landing Gear (MLG), do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-24-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-21-24-020-001

> **WARNING**
> MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE AWAY FROM THE AREA BELOW THE NOSE BEFORE YOU DEFLATE THE SHOCK STRUT. WHEN YOU DEFLATE THE SHOCK STRUT, THE NOSE CAN MOVE DOWN. THIS CAN CAUSE INJURIES TO PERSONNEL OR DAMAGE TO EQUIPMENT.

(3) Deflate the shock strut [4] for the NLG:

(a) Remove the cap assembly [1] for the gas valve [2] which is on the top of the shock strut [4].

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WARNING DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(b) Loosen the swivel nut [3] a maximum of two turns.

NOTE: Fluid in the shock strut [4] can have bubbles when you release the pressure. Deflate the shock strut slowly to prevent the leakage of the fluid through the gas valve [2].

(c) Loosen the swivel nut [3] fully when all of the pressure in the shock strut [4] is released.

NOTE: The shock strut [4] is fully deflated when the dimension "X" is 13.9 in. (353 mm).

SUBTASK 32-21-24-680-001

(4) Drain the hydraulic fluid from the shock strut [4]:

NOTE: Very little fluid will come out.

(a) Remove the cap assembly [5] from the oil charging valve [6].

(b) Put a 5 gallon (19 liter) hydraulic fluid resistant container, STD-1110 in a position to catch the hydraulic fluid when the oil charging valve [6] is opened.

(c) Install the drain equipment on the oil charging valve [6]:

NOTE: The tool, landing gear shock strut drain valve, SPL-1829, could also be used, but it will take much longer to drain the shock strut [4].

1) Cut a length of plastic tubing, long enough to reach the container on the floor.

2) Insert a small allen wrench in the end of the length of tubing, such that the long end of the allen wrench is flush with the end of the tube and the short end penetrates the wall of the tube.

3) Install the tubing on the oil charging valve [6] such that the allen wrench goes into the check valve and holds it open to drain the hydraulic fluid.

(d) Remove the drain equipment when you have removed all of the hydraulic fluid.

SUBTASK 32-21-24-580-001

(5) Lift the nose of the airplane until the shock strut [4] extends approximately 10 in. (254 mm), do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-24-020-005

(6) Remove the screw [28], washer [26], washer [27] and the nut [25] to disconnect the clamp from the taxi light assembly.

NOTE: Disconnect the clamp with the electrical conduit attached.

SUBTASK 32-21-24-020-024

(7) Remove the taxi light and housing (PAGEBLOCK 33-45-01/201).

LOM ALL

SUBTASK 32-21-24-020-025

(8) Remove the tow fitting (TASK 32-21-14-000-801).

SUBTASK 32-21-24-020-026

(9) Remove the NLG wheel and tire (TASK 32-45-21-000-801).

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LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-24-020-006

(10) Remove the nut [29], and the washer [30] to disconnect the clamp from the inner cylinder [14].

NOTE: Disconnect the clamp with the electrical conduit attached.

SUBTASK 32-21-24-020-007

(11) Remove the screw [50], washer [51], and the nut [52] to disconnect the clamp from the lower torsion link [53].

NOTE: Disconnect the clamp with the electrical conduit attached.

SUBTASK 32-21-24-800-001

(12) Attach the electrical conduits, box assembly [32], and the wire harness plug for the taxi light to the outer cylinder [9] so that it is not in the way.

LOM ALL

SUBTASK 32-21-24-020-009

(13) Do this task: Nose Landing Gear Lower Torsion Link Removal, TASK 32-21-31-000-802.

F. Inner Cylinder Removal

SUBTASK 32-21-24-020-010

(1) Disconnect the gland nut [18] from the outer cylinder [9] (Figure 401):

(a) Remove the bolt [15], washer [16], and the lockplate [17] to release the gland nut [18].

I (b) Use the gland nut wrench, SPL-1867 to disconnect the gland nut [18] from the outer cylinder [9].

NOTE: Keep the gland nut [18] in its position against the outer cylinder [9] after you have disconnected it from the outer cylinder [9].

SUBTASK 32-21-24-580-002

(2) Lift the nose of the airplane until there is enough room to install the scraper retainer, C32016-4 or -67, SPL-1378 [61] and the scraper lock assembly, C32016-5 or -68, SPL-1379 [56] on the gland nut [18], do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-21-24-480-002

(3) Install the scraper retainer, C32016-4 or -67, SPL-1378 [61] and the scraper lock assembly, C32016-5 or -68, SPL-1379 [56] on the gland nut [18].

NOTE: This will make sure the scraper ring [21] for the gland nut [18] does not come out of its groove.

(a) Install the scraper retainer, C32016-4 or -67, SPL-1378 [61] on the gland nut [18].

(b) Install the scraper lock assembly, C32016-5 or -68, SPL-1379 [56] to hold the scraper retainer, C32016-4 or -67, SPL-1378 [61] in its position on the gland nut [18].

SUBTASK 32-21-24-020-011

(4) Move the gland nut [18] down at the inner cylinder [14].

NOTE: If the scraper ring [21] comes out of its groove, use the scraper plunger, C32016-2, SPL-1376 [62] and the scraper reducer, C32016-3, SPL-1377 [63] to install the scraper ring [21] back in its groove.

SUBTASK 32-21-24-020-012

(5) Move the lower bearing carrier [20]:

(a) Loosely install the seal puller assembly, C32016-6, SPL-4047 [55] around the inner cylinder [14].

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(b) Push the seal puller assembly, C32016-6, SPL-4047 [55] up, such that it will install correctly at the bottom of the outer cylinder [9].

(c) Align the holes in the seal puller assembly, C32016-6, SPL-4047 [55] with the holes in the lower bearing carrier [20] for the puller screws [60].

(d) Install the carrier puller screws [60] to hold the seal puller assembly, C32016-6, SPL-4047 [55] to the lower bearing carrier [20].

(e) Tighten the retainer screws on each side of the seal puller assembly, C32016-6, SPL-4047 [55].

(f) Install the strap assy, C32017-60, SPL-3927 [57] around the axle and connect the ends to the shoulder bolts on each side of the seal puller assembly, C32016-6, SPL-4047 [55].

SUBTASK 32-21-24-580-003

(6) Lift the airplane until the lower bearing carrier [20] is completely out of the outer cylinder [9], (TASK 07-11-21-580-801).

SUBTASK 32-21-24-020-013

(7) Remove the inner cylinder [14] from the outer cylinder [9]:

(a) Remove the downlock pin from the NLG, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

WARNING DO NOT PUT A PLUG IN THE OPEN PORTS OF THE RETRACT ACTUATOR. THE HYDRAULIC LINES CAN BREAK AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(b) Disconnect the hydraulic lines from the retract actuator.

(c) Put a cap on the hydraulic lines.

(d) Push up on the lock link to move it from the locked overcenter position.

(e) Optional: Connect a hydraulic pump to the retract actuator.

NOTE: The pressure line from the pump must be connected to the Up port of the actuator. The return line to the pump must be connected to the Down port of the actuator.

WARNING HOLD THE INNER CYLINDER WITH A ROPE BEFORE YOU CONNECT OR DISCONNECT THE CYLINDERS. IF YOU DO NOT HOLD THE INNER CYLINDER IN ITS POSITION, IT WILL FALL. THE INNER CYLINDER IS HEAVY AND CAN CAUSE INJURIES TO PERSONNEL OR DAMAGE TO EQUIPMENT.

CAUTION BE CAREFUL NOT TO CAUSE DAMAGE TO THE INNER CYLINDER OR THE METERING PIN. DAMAGE TO THESE PARTS CAN CAUSE DAMAGE TO THE SEALS.

(f) Slowly apply pressure to the retract actuator to remove the inner cylinder [14] from the outer cylinder [9]. This will move the NLG forward.

(g) Remove the inner cylinder [14].

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SUBTASK 32-21-24-840-001

WARNING	MAKE SURE THAT A MINIMUM OF TWO PERSONS WILL HOLD THE INNER CYLINDER WHEN YOU DO THE SUBSEQUENT STEPS. THE INNER CYLINDER IS HEAVY. INJURY TO PERSONS OR DAMAGE TO THE EQUIPMENT CAN OCCUR.

(8) Hold the inner cylinder [14] in a vertical position.

SUBTASK 32-21-24-040-001

(9) Move the control lever for the landing gear to OFF.

NOTE: This will release the hydraulic pressure from the lock actuator of the NLG.

G. Remove the Components From the Inner Cylinder

NOTE: Do these steps if the inner cylinder you will install does not have these components installed.

SUBTASK 32-21-24-020-014

(1) Remove the metering pin [11] from the inner cylinder [14]:

(a) Use the metering pin and retainer ring equipment, SPL-1895, to remove the nut [12] and the retaining ring [67] from the inner cylinder [14].

(b) Remove the metering pin [11] from the inner cylinder [14].

(c) Remove the ring assembly [75] from the metering pin [11].

SUBTASK 32-21-24-020-015

(2) Remove the upper bearing carrier [68] and the recoil valve assembly from the top of the inner cylinder [14]:

(a) Remove the upper bearing [8] from the upper bearing carrier [68].

NOTE: Pull the bearing apart slightly and slide it up and off the upper bearing carrier.

(b) Remove the upper bearing carrier [68] halves from the inner cylinder [14].

(c) Remove the recoil valve ring [69].

(d) Remove the recoil valve [70] from the upper centering cam [10].

SUBTASK 32-21-24-020-016

(3) Remove the upper centering cam [10] and lower centering cam [13] from the inner cylinder [14].

(a) Remove the dowel retaining circlip [71] and the dowel [72] from the inner cylinder [14].

SUBTASK 32-21-24-020-017

(4) Remove the lower bearing carrier [20] from the inner cylinder [14]:

(a) Use rubber mallet and lightly hit the bottom of the seal puller assembly, C32016-6, SPL-4047 [55] until the lower bearing carrier [20] can be pulled out off the top of the inner cylinder [14].

NOTE: The lower bearing carrier is coated with a dry lube film. The film may be worn and appear uneven, this is not cause for bearing carrier replacement.

(b) Remove the puller screw [60] to disconnect the seal puller assembly, C32016-6, SPL-4047 [55] from the lower bearing carrier [20].

(c) Remove the seal puller assembly, C32016-6, SPL-4047 [55] from the lower bearing carrier [20].

(d) Put the lower bearing carrier [20] on a table or bench.

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SUBTASK 32-21-24-020-018

(5) Remove the seal retainer [19]:

(a) Remove the bearing carrier pin [22] for the seal retainer [19].

(b) Move the seal retainer [19] away from the lower bearing carrier [20] to get access to the active dynamic seal.

SUBTASK 32-21-24-900-001

(6) Install a new scraper ring [21] on the gland nut [18] if there is any sign of damage or wear on the old scraper ring [21]:

NOTE: The scraper ring prevents dirt and debris from entering the shock strut when the inner and outer cylinder compress.

(a) Remove the gland nut [18] from the inner cylinder [14].

(b) Remove the scraper retainer, C32016-4 or -67, SPL-1378 [61] and the scraper lock assembly, C32016-5 or -68, SPL-1379 [56] from the gland nut [18].

(c) Remove the old scraper ring [21] in its groove on the gland nut [18].

(d) Install the new scraper ring [21] in its groove on the gland nut [18].

(e) Make sure that you use the correct scraper configuration to be installed in its groove on the gland nut [18].

NOTE: There are two possible scraper configurations used for installation (Figure 401).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L32613 S0006575034_V2

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 1 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L32637 S0006575035_V3

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 2 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L32660 S0006575036_V4

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 3 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2337571 S0000530426_V2

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 4 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

WHEELS AND TIRES REMOVED FOR CLARITY.

L32677 S0006575037_V4

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 5 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

WHEELS AND TIRES REMOVED FOR CLARITY.

2854783 S0000668481_V2

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 6 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L32706 S0006575038_V4

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 7 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 8 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 9 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L32744 S0006575040_V3

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 10 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L32816 S0006575041_V3

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 11 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2854801 S0000668709_V1

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 12 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L32858 S0006575042_V4

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 13 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L33514 S0006575043_V3

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 14 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L33529 S0006575044_V3

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 15 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2854807 S0000668711_V1

Nose Landing Gear Shock Strut Inner Cylinder Installation
Figure 401/32-21-24-990-801 (Sheet 16 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-24-400-801

3. NLG Inner Cylinder Installation

(Figure 401)

A. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-15-41-610-805	Nose Landing Gear Shock Strut Servicing, Airplane on Jacks (P/B 301)
12-21-21-640-802	Nose Landing Gear Lower End Components Servicing (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-14-400-801	Nose Landing Gear Tow Fitting Installation (P/B 401)
32-21-31-400-802	Nose Landing Gear Lower Torsion Link Installation (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
33-45-01-400-801	Taxi Light Housing Assembly - Installation (P/B 201)
33-45-01-960-801	Taxi Light - Lamp Replacement (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1376	Scraper Plunger, C32016-2 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1377	Scraper Reducer, C32016-3 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1378	Scraper Retainer, C32016-4 or -67 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1379	Scraper Lock Assy, C32016-5 or -68 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1382	Dynamic Seal Guide, C32016-45 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1383	Compressor Assy Half, C32016-10 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
SPL-1384	Thread Protector Assy, C32016-11 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1385	Thread Protector Half, C32016-21 (included in C32016 eqpt) Part #: C32016-66 Supplier: 81205 Opt Part #: C32016-33 Supplier: 81205 Opt Part #: C32016-46 Supplier: 81205
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1867	Wrench - Gland Nut, Shock Strut NLG Part #: C32025-7 Supplier: 81205 Opt Part #: C32025-1 Supplier: 81205
SPL-1895	Removal/Installation Equipment - Metering Pin and Retainer Ring, NLG Part #: C32035-1 Supplier: 81205
SPL-3927	Strap Assy, C32017-60 (included in C32017 Eqpt) Part #: C32017-67 Supplier: 81205 Opt Part #: C32017-52 Supplier: 81205 Opt Part #: C32017-53 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
D00467	Fluid - Landing Gear Shock Strut	BMS3-32 Type II
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	Packing	32-21-00-01A-055	LOM ALL
17	Lockplate	32-21-00-01A-175	LOM ALL

E. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

F. Install the Components on the Inner Cylinder

NOTE: Do these steps if the inner cylinder you will install does not have these components installed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-24-420-001

(1) Install the gland nut [18] on the inner cylinder [14].

NOTE: If the scraper ring [21] comes out of its groove, use the scraper plunger, C32016-2, SPL-1376 [62] and scraper reducer, C32016-3, SPL-1377 [63], to install the scraper ring [21] back in its groove.

SUBTASK 32-21-24-420-002

(2) Install the seal retainer [19]:

(a) Put the seal retainer [19] in its position on the lower bearing carrier [20].

(b) Align the pin holes in the seal retainer [19] with the pin holes in the lower bearing carrier [20].

(c) Install the bearing carrier pins [22] to connect the seal retainer [19] to the lower bearing carrier [20].

SUBTASK 32-21-24-840-002

WARNING MAKE SURE THAT A MINIMUM OF TWO PERSONS WILL HOLD THE INNER CYLINDER WHEN YOU DO THE SUBSEQUENT STEPS. THE INNER CYLINDER IS HEAVY. INJURY TO PERSONS OR DAMAGE TO THE EQUIPMENT CAN OCCUR.

(3) Hold the inner cylinder [14] in a vertical position.

SUBTASK 32-21-24-480-003

(4) Install the dynamic seal guide, C32016-45, SPL-1382 [66], at the top of the inner cylinder [14].

SUBTASK 32-21-24-420-003

(5) Install the lower bearing carrier [20]:

CAUTION MAKE SURE THAT THE BACKUP RINGS AND THE SEAL STAY TOGETHER WHEN YOU MOVE THE LOWER BEARING CARRIER. IF THE BACKUP RINGS AND THE SEAL MOVE APART, THEY WILL NOT INSTALL CORRECTLY. THIS CAN CAUSE DAMAGE TO THE SEAL AND THE BACKUP RINGS.

(a) Put the lower bearing carrier [20] in its position for installation on the inner cylinder [14].

(b) Use rubber mallet and lightly hit the top of the lower bearing carrier [20] until it passes the dynamic seal guide, C32016-45, SPL-1382 [66].

(c) Move the lower bearing carrier [20] down to the bottom of the inner cylinder [14].

SUBTASK 32-21-24-020-019

(6) Remove the dynamic seal guide, C32016-45, SPL-1382 [66], from the inner cylinder [14].

SUBTASK 32-21-24-420-004

(7) Install the following items:

(a) Install the lower centering cam [13] on the inner cylinder [14].

(b) Install the dowels [72] in their position on the inner cylinder [14].

(c) Install the dowel retaining circlip [71] on the inner cylinder [14] and on the dowels [72] to hold the dowels [72] in their place.

(d) Install the upper centering cam [10] on the inner cylinder [14].

(e) Install the upper bearing carrier [68] and recoil valve [70] on the inner cylinder [14]:

1) Install the recoil valve [70] on the top of the upper centering cam [10].

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2) Install the recoil valve ring [69] on the recoil valve [70] if it was removed.

3) Install the upper bearing carrier [68] on the inner cylinder [14].

(f) Install the upper bearing [8] on the upper bearing carrier [68] halves.

NOTE: If the upper bearing [8] does not fit tightly around the bearing carrier [68], use the compressor assy half, C32016-10, SPL-1383 [73] to hold the bearing closed during inner cylinder [14] installation.

NOTE: Make an overlap of ¼ in. (6 mm) to the upper bearing [8] to keep its round shape.

SUBTASK 32-21-24-420-005

(8) Install the metering pin [11] in the inner cylinder [14]:

(a) Cover the ring assembly [75] fully with fluid, D00467.

(b) Install the ring assembly [75] on the metering pin [11].

(c) Install the metering pin [11], retaining ring [67], and nut [12] in the inner cylinder [14].

1) Install the retaining ring [67] on the metering pin [11] with the flange side first (Figure 401).

(d) Use the metering pin and retainer ring equipment, SPL-1895, to loosen the nut [12] and allow the retaining ring [67] to expand into the groove in the inner cylinder [14].

(e) Use the metering pin and retainer ring equipment, SPL-1895, to tighten the nut [12] to 75 ft-lb (101.7 N·m) - 100 ft-lb (135.6 N·m).

G. Install the Inner Cylinder in the Outer Cylinder

SUBTASK 32-21-24-420-006

(1) Install the compressor assy half, C32016-10, SPL-1383 [73]:

(a) Install the compressor assy half, C32016-10, SPL-1383 [73], such that it fits at the bottom of the outer cylinder [9].

(b) Install the strap assy, C32017-60, SPL-3927 [57], around the outer cylinder [9] and connect the ends to the shoulder bolts on the side of the compressor assy half, C32016-10, SPL-1383 [73].

1) Tighten the strap assy, C32017-60, SPL-3927 [57].

SUBTASK 32-21-24-420-007

(2) Install the inner cylinder [14] in the outer cylinder [9]:

CAUTION BE CAREFUL NOT TO CAUSE DAMAGE TO THE INNER CYLINDER OR THE METERING PIN. DAMAGE TO THESE PARTS CAN CAUSE DAMAGE TO THE SEALS.

(a) Put the inner cylinder [14] in position to install in the outer cylinder [9].

(b) Disconnect the hydraulic pump from the retract actuator.

(c) Remove the caps from the hydraulic lines.

(d) Connect the hydraulic lines to the retract actuator.

(e) Torque the B-nuts on the hydraulic lines to the value of 104 in-lb (11.8 N·m) - 116 in-lb (13.1 N·m).

(f) Move the Nose Landing Gear (NLG) aft while you put the inner cylinder [14] into the outer cylinder [9].

(g) Push down on the lock link to move it to the locked overcenter position.

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(h) Install the downlock pin in the NLG, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-24-080-001

(3) Remove the compressor assy half, C32016-10, SPL-1383 [73]:

(a) Remove the strap assy, C32017-60, SPL-3927 [57], around the outer cylinder [9] and to the shoulder bolts on the side of the compressor assy half, C32016-10, SPL-1383 [73].

(b) Remove the compressor assy half, C32016-10, SPL-1383 [73], from the outer cylinder [9].

SUBTASK 32-21-24-420-008

(4) Carefully put the thread protector half, C32016-21, SPL-1385 [59], between the outer cylinder [9] and inner cylinder [14].

NOTE: The thread protector will expand and press against the outer cylinder [9], this will protect the static seals from the gland nut threads on the outer cylinder [9].

SUBTASK 32-21-24-480-004

(5) Install the thread protector assembly, C32016-11, SPL-1384 [58]:

(a) Install the thread protector assembly, C32016-11, SPL-1384 [58], such that it fits at the bottom of the outer cylinder [9].

(b) Install the strap assy, C32017-60, SPL-3927 [57], around the outer cylinder [9] and connect the ends to the shoulder bolts on the side of the thread protector assembly, C32016-11, SPL-1384 [58].

1) Tighten the strap assy, C32017-60, SPL-3927 [57].

SUBTASK 32-21-24-580-004

(6) Lift the NLG with an axle jack until the lower bearing carrier [20] moves into the recess between the inner cylinder [14] and outer cylinder [9] (TASK 07-11-03-580-802).

(a) Make sure that the static seals stay in their positions as the lower bearing carrier [20] is installed.

(b) Continue to lift the NLG with an axle jack until the shock strut extension is reduced to three or four inches (TASK 07-11-03-580-802).

SUBTASK 32-21-24-020-020

(7) Remove the thread protector assembly, C32016-11, SPL-1384 [58], and thread protector half, C32016-21, SPL-1385 [59].

SUBTASK 32-21-24-020-021

(8) Remove the scraper retainer, C32016-4 or -67, SPL-1378 [61], and scraper lock assembly, C32016-5 or -68, SPL-1379, from the gland nut [18].

SUBTASK 32-21-24-640-001

WARNING

DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(9) Apply a thin layer of corrosion inhibiting material, G50136, to these items:

(a) The thread major and minor diameters of the gland nut [18]

(b) The thread major and minor diameters of the mating outer cylinder [9].

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(c) The outer cylinder [9] thread relief.

SUBTASK 32-21-24-420-009

(10) Install the gland nut [18]:

(a) Move the gland nut [18] up on the inner cylinder [14] and engage the threads to the outer cylinder [9].

(b) Use the gland nut wrench, SPL-1867, to tighten the gland nut [18] to 100 ft-lb (135.6 N·m) - 125 ft-lb (169.5 N·m).

(c) Remove and clean the unwanted corrosion inhibiting material, G50136, from the joint of the gland nut [18] and outer cylinder [9].

SUBTASK 32-21-24-420-010

(11) Install the lockplate [17] for the gland nut [18]:

WARNING

DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(a) Apply a thin layer of corrosion inhibiting material, G50136, to the shank and threads of bolts [15] and washers [16].

(b) Install the lockplate [17] in the holes which will put the tab of the lockplate [17] as close to the gland nut [18] slot as possible.

1) If it is necessary, loosen the gland nut [18] slightly to align slot in the gland nut [18] with the lockplate [17].

(c) Install the bolts [15] and washers [16].

(d) Tighten the bolts [15].

(e) Install MS20995C32 lockwire, G01048, on the bolts [15].

SUBTASK 32-21-24-420-018

(12) Do this task: Nose Landing Gear Lower Torsion Link Installation, TASK 32-21-31-400-802.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-24-420-012

(13) Install the clamps that hold the electrical conduit [54] to the bracket on the lower torsion link [53]:

(a) Put the electrical conduit [54] in its position on the bracket.

(b) Install the screw [50], washer [51], and nut [52] to attach the clamps to the bracket.

SUBTASK 32-21-24-420-013

(14) Install the screw [28], washer [26], washer [27], and nut [25] to connect the electrical conduit to the inner cylinder [14].

LOM ALL

SUBTASK 32-21-24-420-019

(15) Do this task: Nose Landing Gear Tow Fitting Installation, TASK 32-21-14-400-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-24-420-020

(16) Do this task: Taxi Light Housing Assembly - Installation, TASK 33-45-01-400-801.

SUBTASK 32-21-24-420-015

(17) Connect the electrical conduit plug to the taxi light on the inner cylinder [14].

LOM ALL

SUBTASK 32-21-24-980-001

(18) Move the inner cylinder [14] from the fully extended to the fully compressed position.

(a) Make sure that the total travel is 15.50 in. (39.4 cm).

SUBTASK 32-21-24-860-002

(19) Remove the NLG towing lever pin, SPL-1499, from the towing lever.

SUBTASK 32-21-24-420-016

(20) Install the oil charging valve [6]:

(a) Remove and discard the old packing [7].

(b) Apply a thin layer of fluid, D00467, on the new packing [7].

(c) Install the new packing [7] on the oil charging valve [6].

(d) Install the oil charging valve [6] and tighten it to 22 ft-lb (29.8 N·m) – 25 ft-lb (33.9 N·m).

(e) Install the cap assembly [5] loosely.

NOTE: The cap assembly [5] will be tightened in the shock strut servicing task.

(f) Apply compound, A00226, to the oil charging valve [6].

NOTE: Apply it to make sure the seal made by the compound, A00226, must break if the oil charging valve [6] becomes loose.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-24-710-001

(21) Do a test of the taxi light on the NLG (TASK 33-45-01-960-801).

LOM ALL

SUBTASK 32-21-24-600-001

(22) Do this task:Nose Landing Gear Shock Strut Servicing, Airplane on Jacks, TASK 12-15-41-610-805.

SUBTASK 32-21-24-420-017

(23) Make sure that the swivel nut [3] is tightened to 5 ft-lb (6.8 N·m) – 7 ft-lb (9.5 N·m) and cap assembly [1] is installed for the gas valve [2].

SUBTASK 32-21-24-710-002

(24) Do a test on the steering system of the nose wheel (TASK 32-51-00-700-801).

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-24-580-005

(1) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-21-24-640-002

(2) Lubricate the lube fittings on the upper torsion link [31], do this task: Nose Landing Gear Lower End Components Servicing, TASK 12-21-21-640-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR TORSION LINKS - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the upper torsion link (referred to as the link assembly [15]) from the nose landing gear

(2) An installation of the upper torsion link on the nose landing gear.

(3) A removal of the lower torsion link (referred to as the link assembly [11]) from the nose landing gear

(4) An installation of the lower torsion link on the nose landing gear.

(5) The disconnection of the torsion links of the nose landing gear

(6) The connection of the torsion links of the nose landing gear.

TASK 32-21-31-000-801

2. Nose Landing Gear Upper Torsion Link Removal

(Figure 401)

A. General

(1) This procedure supplies instructions to remove the upper torsion link.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
713	Nose Landing Gear

D. Prepare for the Removal

SUBTASK 32-21-31-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Nose Landing Gear Upper Torsion Link Removal

SUBTASK 32-21-31-020-001

(1) Disconnect the box assembly [38] from the upper torsion link assembly [15]:

NOTE: Disconnect the box assembly [38] with the electrical conduits attached.

(a) Remove the screws [44] and washers [45] and remove the cover [46] from the box assembly [38].

(b) Remove the nuts [33] and the washers [34] from the bolts [36].

(c) Remove the bolts [36] and the washers [35] from the upper torsion link assembly [15].

(d) Remove the washers [35] from the bolts [36].

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SUBTASK 32-21-31-020-002

(2) Remove the clamps [25] that hold the electrical conduits [22] to the bracket [26]:

(a) Remove the screws [23] that hold the clamps [25] to the bracket [26].

(b) Remove the clamps [25] and the nut clips [24] from the bracket [26].

SUBTASK 32-21-31-020-003

(3) Remove the bracket [26] from the upper torsion link assembly [15]:

(a) Remove the nuts [43] and the washers [42] from the bolts [39].

(b) Remove the bracket [26] and the washers [41] from the bolts [39].

(c) Remove the bolts [39] and the washers [40] from the upper torsion link assembly [15].

(d) Remove the washers [40] from the bolts [39].

SUBTASK 32-21-31-020-004

(4) Disconnect the sensor brackets [17] from the upper torsion link assembly [15]:

NOTE: Disconnect the brackets [17] with the sensors [16] and the electrical conduits [22] attached.

(a) Remove the nuts [21] and the washers [20] from the bolts [18].

(b) Remove the bolts [18] that hold the sensor brackets [17] to the upper torsion link assembly [15].

(c) Remove the washers [19] from the bolts [18].

(d) Isolate the sensor brackets [17] from the upper torsion link assembly [15].

1) If it is necessary, use a string to hold the sensor brackets [17] and attach the string over the top of the outer cylinder.

SUBTASK 32-21-31-480-002

(5) Use a rope to hold the upper end of the lower torsion link assembly [11] to the outer cylinder.

NOTE: This task will hold the lower torsion link assembly [11] in its position when you remove and install the upper torsion link assembly [15] in the subsequent steps.

SUBTASK 32-21-31-020-005

(6) Remove the upper torsion link assembly [15] from the nose landing gear:

(a) Remove the cotter pin [14], nut [13] and the washer [12] from the apex pin [6].

(b) Remove the apex pin [6] to disconnect the upper torsion link assembly [15] from the lower torsion link assembly [11].

(c) Remove the cotter pin [2], nut [1] and the washer [3] from the torsion link pin [5].

(d) Remove the torsion link pin [5] to disconnect the upper torsion link assembly [15] from the steering collar [4].

(e) Isolate the box assembly [38] from the upper torsion link assembly [15].

1) If it is necessary use a string to hold the box assembly [38] and attach the string to the outer cylinder.

(f) Remove the upper torsion link assembly [15] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR

Nose Landing Gear Torsion Links Installation
Figure 401/32-21-31-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR

Nose Landing Gear Torsion Links Installation
Figure 401/32-21-31-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Torsion Links Installation
Figure 401/32-21-31-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2952095 S0000729436_V1

Nose Landing Gear Torsion Links Installation
Figure 401/32-21-31-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A-A

B-B

F81654 S0006575051_V2

Nose Landing Gear Torsion Links Installation
Figure 401/32-21-31-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-31-400-801

3. Nose Landing Gear Upper Torsion Link Installation

(Figure 401)

A. General

(1) This procedure supplies instructions to install the upper torsion link.

B. References

Reference	Title
12-21-21-640-802	Nose Landing Gear Lower End Components Servicing (P/B 301)

C. Consumable Materials

Reference	Description	Specification
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Location Zones

Zone	Area
713	Nose Landing Gear

E. Nose Landing Gear Upper Torsion Link Installation

SUBTASK 32-21-31-420-001

(1) Connect the upper torsion link assembly [15] to the steering :

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to these items:

1) The threads and thread reliefs of the torsion link pin [5].
2) The threads of the nut [1].
3) The faces of the washer [3].
4) The mating surfaces of the upper torsion link assembly [15] and the steering collar [4].

(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(c) Put the upper torsion link assembly [15] in its position on the steering collar [4].

(d) Put the torsion link pin [5] through the upper torsion link assembly [15] and the steering collar [4].

(e) Install the washer [3] and the nut [1] on the torsion link pin [5].

(f) Tighten the nut [1] to 250 - 300 pound-inches (23 - 34 newton-meters) more than the run-on torque.

(g) If it is necessary, loosen the nut [1] to the nearest castellation to align the holes for the cotter pin [2].

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(h) Install the cotter pin [2] in the torsion link pin [5].

SUBTASK 32-21-31-420-002

(2) Connect the upper torsion link assembly [15] to the lower torsion link assembly [11]:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to these items:

1) The threads and thread reliefs of the apex pin [6].
2) The threads of the nut [13].
3) The faces of the washer [12].
4) The mating surfaces of the upper torsion link assembly [15] and the lower torsion link assembly [11].

(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(c) Align the apex holes in the upper torsion link assembly [15], and the lower torsion link assembly [11].

(d) Put the apex pin [6] through the lower torsion link assembly [11] and the upper torsion link assembly [15].

(e) Install the washer [12] and the nut [13] on the apex pin [6].

(f) Tighten the nut [13] to 160 in-lb (18.1 N·m) – 190 in-lb (21.5 N·m) more than the run-on torque.

(g) Install the cotter pin [14] in the apex pin [6]. If it is necessary, loosen the nut [13] to the nearest castellation to align the holes for the cotter pin [14].

SUBTASK 32-21-31-080-001

(3) Remove the rope that holds the upper end of the lower torsion link assembly [11] to the outer cylinder.

SUBTASK 32-21-31-020-006

(4) Connect the sensor brackets [17] to the upper torsion link assembly [15]:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to these items:

1) The threads and thread reliefs of the bolts [18].
2) The threads of the nuts [21].
3) The faces of the washers [19] and washers [20].

(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

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(c) If a string is attached to the sensor brackets [17] and the outer cylinder, remove the string.

(d) Put the sensor bracket [17] in its position on the upper torsion link assembly [15].

(e) Install the washers [19] on the bolts [18].

(f) Put the bolts [18] through the upper torsion link assembly [15], and the sensor brackets [17].

(g) Install the washers [20] and the nuts [21] on the bolts [18].

(h) Tighten the nuts [21].

SUBTASK 32-21-31-020-007

(5) Connect the box assembly [38] to the upper torsion link assembly [15]:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to these items:

1) The threads and shank of the bolts [36].

2) The threads of the nuts [33].

3) The faces of the washers [34] and washers [35].

(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(c) If a string is attached to the box assembly [38] and the outer cylinder, remove the string.

(d) Put the box assembly [38] in its position on the upper torsion link assembly [15].

(e) Install the washers [35] on the bolts [36].

(f) Put the bolts [36] through the box assembly [38] and the upper torsion link assembly [15].

(g) Install the washers [34] and the nuts [33] on the bolts [36].

(h) Install thecover [46] on the box assembly [38].

(i) Install the screws [44] and the washers [45].

SUBTASK 32-21-31-020-008

(6) Install the bracket [26] on the upper torsion link assembly [15]:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to these items:

1) The threads and shank of the bolts [39].

2) The threads of the nuts [43].

3) The faces of the washers [40], washers [41], and washers [42].

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(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(c) Install the washers [40] on the bolts [39].

(d) Put the bolts [39] through the upper torsion link assembly [15], washers [41], and the bracket [26].

(e) Install the washers [42] and the nuts [43] on the bolts [39].

SUBTASK 32-21-31-420-003

(7) Install the clamps [25] that hold the electrical conduits [22] to the bracket [26]:

(a) Put the electrical conduit [22] in its position on the bracket [26].

(b) Install the clamps [25] and the nut clips [24] on the bracket [26].

(c) Put the screws [23] through the clamps [25], nut clips [24], and the bracket [26].

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-31-640-001

(1) Lubricate the lube fittings on the upper torsion link assembly [15], do this task: Nose Landing Gear Lower End Components Servicing, TASK 12-21-21-640-802.

END OF TASK

TASK 32-21-31-000-802

4. Nose Landing Gear Lower Torsion Link Removal

(Figure 401)

A. General

(1) This procedure supplies instructions to remove the lower torsion link.

B. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-45-21-000-801	Nose Landing Gear Wheel and Tire Assembly - Removal (P/B 401)

C. Location Zones

Zone	Area
713	Nose Landing Gear

D. Prepare for the Removal

SUBTASK 32-21-31-480-003

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-31-580-001

(2) Lift the nose landing gear with an axle jack, do this task: Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E, TASK 07-11-03-580-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-31-010-001

(3) Remove the left or right wheel and tire of the nose landing gear, do this task: Nose Landing Gear Wheel and Tire Assembly - Removal, TASK 32-45-21-000-801.

E. Nose Landing Gear Lower Torsion Link Removal

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-31-020-009

(1) Disconnect the bracket [31] from the lower torsion link assembly [11]:

NOTE: Disconnect the bracket [31] with the electrical conduits [32] attached.

(a) Remove the nuts [30] and the washers [29] from the bolts [27].

(b) Remove the bolts [27] and the washers [28] from the bracket [31] and the lower torsion link assembly [11].

(c) Remove the washers [28] from the bolts [27].

LOM ALL

SUBTASK 32-21-31-480-004

(2) Use a rope to hold the aft end of the upper torsion link assembly [15] to the outer cylinder.

NOTE: This step will hold the upper torsion link assembly [15] in its position when you remove and install the lower torsion link assembly [11] in the subsequent steps.

SUBTASK 32-21-31-020-010

(3) Remove the lower torsion link assembly [11] from the nose landing gear:

(a) Remove the cotter pin [14], nut [13] and the washer [12] from the apex pin [6].

(b) Remove the apex pin [6] to disconnect the lower torsion link assembly [11] from the upper torsion link assembly [15].

(c) Remove the cotter pin [10], nut [9] and the washer [8] from the torsion link pin [7].

(d) Remove the torsion link pin [7] to disconnect the lower torsion link assembly [11] from the inner cylinder.

(e) Remove the lower torsion link assembly [11] from the airplane.

END OF TASK

TASK 32-21-31-400-802

5. Nose Landing Gear Lower Torsion Link Installation

(Figure 401)

A. General

(1) This procedure supplies instructions to install the lower torsion link.

B. References

Reference	Title
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-21-21-640-802	Nose Landing Gear Lower End Components Servicing (P/B 301)
32-45-21-400-801	Nose Landing Gear Wheel and Tire Assembly - Installation (P/B 401)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Location Zones

Zone	Area
713	Nose Landing Gear

E. Nose Landing Gear Lower Torsion Link Installation

SUBTASK 32-21-31-420-004

(1) Connect the lower torsion link assembly [11] to the inner cylinder:

(a) Make sure that the lower lube fittings point up.

(b) Lubricate the chrome plated surfaces of the torsion link pin [7], lower torsion link assembly [11], and the mating surfaces of the inner cylinder with grease, D00633.

(c) Remove any excess grease, D00633.

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(d) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the threads of the nut [9] and the faces of the washer [8].

(e) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(f) Put the lower torsion link assembly [11] in its position on the inner cylinder.

(g) Put the torsion link pin [7] through the lower torsion link assembly [11] and the inner cylinder.

(h) Install the washer [8] and the nut [9] on the torsion link pin [7].

(i) Tighten the nut [9] to 250 in-lb (28.2 N·m) – 300 in-lb (33.9 N·m) more than the run-on torque.

(j) If it is necessary, loosen the nut [9] to the nearest castellation to align the holes for the cotter pin [10].

(k) Install the cotter pin [10] in the torsion link pin [7].

SUBTASK 32-21-31-420-005

(2) Connect the lower torsion link assembly [11] to the upper torsion link assembly [15]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to these items:

1) The threads and thread reliefs of the apex pin [6].
2) The threads of the nut [13].
3) The faces of the washer [12].
4) The mating surfaces of the lower torsion link assembly [11] and the upper torsion link assembly [15].

(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(c) Align the apex holes in the lower torsion link assembly [11] and the upper torsion link assembly [15].

(d) Put the apex pin [6] through the lower torsion link assembly [11] and the upper torsion link assembly [15].

(e) Install the washer [12] and the nut [13] on the apex pin [6].

(f) Tighten the nut [13] to 160 in-lb (18.1 N·m) – 190 in-lb (21.5 N·m) more than the run-on torque.

(g) Install the cotter pin [14] in the apex pin [6]. If it is necessary, loosen the nut [13] to the nearest castellation to align the holes for the cotter pin [14].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-21-31-420-006

(3) Connect the bracket [31] to the lower torsion link assembly [11]:

(a) Align the holes in the bracket [31] to the holes in the lower torsion link assembly [11].

(b) Install the washers [28] on the bolts [27].

(c) Put the bolts [27] through the bracket [31] and the lower torsion link assembly [11].

(d) Install the washers [29] and the nuts [30] on the bolts [27].

LOM ALL

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-31-420-007

(1) Do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, TASK 32-45-21-400-801.

SUBTASK 32-21-31-080-002

(2) lower the axle jack for the nose landing gear and remove the jack, do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802

SUBTASK 32-21-31-640-002

(3) Lubricate the lube fittings on the lower torsion link assembly [11], do this task: Nose Landing Gear Lower End Components Servicing, TASK 12-21-21-640-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-31-000-803

6. Nose Landing Gear Torsion Link Disconnection

(Figure 401)

A. General

(1) This procedure supplies instructions to disconnect the torsion links.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205

D. Location Zones

Zone	Area
713	Nose Landing Gear

E. Prepare for the Disconnection

SUBTASK 32-21-31-480-005

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(2) Install the NLG towing lever pin, SPL-1499, for the towing lever in the metering valve for the nose wheel steering.

F. Nose Landing Gear Torsion Link Disconnection

SUBTASK 32-21-31-020-011

(1) Disconnect the apex joint of the upper torsion link assembly [15] and the lower torsion link assembly [11]:

(a) Remove the cotter pin [14], nut [13] and the washer [12] from the apex pin [6].

(b) Remove the apex pin [6] to disconnect the lower torsion link assembly [11] from the upper torsion link assembly [15].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-21-31-400-803

7. Nose Landing Gear Torsion Link Connection

(Figure 401)

A. General

(1) This procedure supplies instructions to connect the torsion links.

B. References

Reference	Title
12-21-21-640-802	Nose Landing Gear Lower End Components Servicing (P/B 301)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205

D. Consumable Materials

Reference	Description	Specification
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Location Zones

Zone	Area
713	Nose Landing Gear

F. Prepare for Nose Landing Gear Torsion Link Connection

SUBTASK 32-21-31-400-001

> **WARNING**
> MAKE SURE THAT YOU INSTALL THE NLG TOWING-LEVER PIN CORRECTLY. IF NOT, SUDDEN MOVEMENT OF THE STEERING COLLAR CAN CAUSE INJURY TO PERSONNEL.

(1) If the NLG towing lever pin, SPL-1499, is not installed, complete the following steps:

(a) Move the towing lever on the metering valve module to the TOW position.

(b) Install the NLG towing lever pin, SPL-1499.

NOTE: The NLG towing lever pin, SPL-1499, holds the towing lever in the TOW position.

G. Nose Landing Gear Torsion Link Connection

SUBTASK 32-21-31-420-008

(1) Connect the apex joint of the upper torsion link assembly [15], and the lower torsion link assembly [11]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to these items:

1) The threads and thread reliefs of the apex pin [6].
2) The threads of the nut [13].
3) The faces of the washer [12].
4) The mating surfaces of the upper torsion link assembly [15] and the lower torsion link assembly [11].

(b) Remove any excess corrosion preventive Cor-Ban 27L Compound, G50237.

(c) Align the apex holes in the upper torsion link assembly [15] and the lower torsion link assembly [11].

(d) Put the apex pin [6] through the lower torsion link assembly [11] and the upper torsion link assembly [15].

(e) Install the washer [12] and the nut [13] on the apex pin [6].

(f) Tighten the nut [13] to 160 in-lb (18.1 N·m) - 190 in-lb (21.5 N·m) more than the run-on torque.

(g) Install the cotter pin [14] in the apex pin [6]. If it is necessary, loosen the nut [13] to the nearest castellation to align the holes for the cotter pin [14].

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-21-31-640-003

(1) Lubricate the lube fittings on the apex joint of the lower torsion link assembly [11] and the upper torsion link assembly [15], do this task: Nose Landing Gear Lower End Components Servicing, TASK 12-21-21-640-802.

(2) Remove the NLG towing lever pin, SPL-1499, for the towing lever from the metering valve for nose wheel steering.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR TORSION LINKS - INSPECTION/CHECK

1. General

A. This task supplies the data for a dimensional inspection of the torsion links for the nose landing gear.

B. This task does not remove or install the torsion links. Refer to the Nose Landing Gear Torsion Links - Removal/Installation for procedures to remove and install the torsion links of the nose landing gear.

TASK 32-21-31-200-801

2. Nose Landing Gear Torsion Links Inspection

(Figure 601)

A. General

(1) This procedure gives wear limits and repair data for the torsion links of the nose landing gear.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-801	Nose Landing Gear Upper Torsion Link Removal (P/B 401)
32-21-31-000-802	Nose Landing Gear Lower Torsion Link Removal (P/B 401)
32-21-31-400-801	Nose Landing Gear Upper Torsion Link Installation (P/B 401)
32-21-31-400-802	Nose Landing Gear Lower Torsion Link Installation (P/B 401)

C. Location Zones

Zone	Area
713	Nose Landing Gear

D. Procedure

SUBTASK 32-21-31-480-006

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-21-31-020-012

(2) To remove or to get access to the torsion links of the nose landing gear do the tasks that follows (Figure 601):

(a) Do this task: Nose Landing Gear Upper Torsion Link Removal, TASK 32-21-31-000-801.

(b) Do this task: Nose Landing Gear Lower Torsion Link Removal, TASK 32-21-31-000-802.

SUBTASK 32-21-31-020-013

(3) Use these tools to check for wear on the parts of the nose landing gear torsion links:

(a) 0-1 inch (0-25 mm) micrometer.

(b) 1-2 inch (25-51 mm) micrometer.

SUBTASK 32-21-31-020-014

(4) Examine the parts of the nose landing gear torsion links for worn areas:

(a) Remove the parts to be checked.

(b) Measure the parts.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Compare the dimensions you measured with the permitted wear dimensions in (Table 601).

(d) If the parts are not in the tolerance, replace or repair the parts.

Table 601/32-21-31-993-803

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#1 BUSHING	I.D.	1.2500 in (31.75) mm	1.2512 in (31.78) mm	1.2544 in (31.86) mm	0.0049 in (0.12) mm
#1 PIN	O.D.	1.2485 in (31.71) mm	1.2495 in (31.73) mm	1.2463 in (31.65) mm	
#2 BUSHING	I.D.	1.2500 in (31.75) mm	1.2512 in (31.78) mm	1.2544 in (31.86) mm	0.0049 in (0.12) mm
#2 PIN	O.D.	1.2485 in (31.71) mm	1.2495 in (31.73) mm	1.2463 in (31.65) mm	
#3 BUSHING	I.D.	0.6250 in (15.86) mm	0.6258 in (15.90) mm	0.6284 in (15.96) mm	0.0039 in (0.10) mm
#3 PIN	O.D.	0.6235 in (15.84) mm	0.6245 in (15.86) mm	0.6219 in (15.80) mm	
#4 BUSHING	I.D.	0.6250 in (15.86) mm	0.6258 in (15.90) mm	0.6284 in (15.96) mm	0.0039 in (0.10) mm
#4 PIN	O.D.	0.6235 in (15.84) mm	0.6245 in (15.86) mm	0.6219 in (15.80) mm	
#5 BUSHING	I.D.	1.2500 in (31.75) mm	1.2512 in (31.78) mm	1.2544 in (31.86) mm	0.0049 in (0.12) mm
#5 PIN	O.D.	1.2485 in (31.71) mm	1.2495 in (31.73) mm	1.2463 in (31.65) mm	
#6 BUSHING	I.D.	1.2500 in (31.75) mm	1.2512 in (31.78) mm	1.2544 in (31.86) mm	0.0049 in (0.12) mm
#6 PIN	O.D.	1.2485 in	1.2495 in	1.2463 in	

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 601/32-21-31-993-803 (Continued)

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
		(31.71) mm	(31.73) mm	(31.65) mm	
#7 TORSION LINK BUSHING	I.D.	5.7550 in (146.18) mm	5.7570 in (146.23) mm	5.7640 in (146.41) mm	0.010 in (0.25) mm
#7 STEERING COLLAR BUSHING	O.D.	5.7520 in (146.10) mm	5.7540 in (146.15) mm	5.7470 in (145.97) mm	
#8 TORSION LINK BUSHING	I.D.	5.2500 in (133.35) mm	5.2520 in (133.40) mm	5.2590 in (133.58) mm	0.010 in (0.25) mm
#8 INNER CYLINDER BUSHING	O.D.	5.2470 in (133.27) mm	5.2490 in (133.32) mm	5.2420 in (133.15) mm	
#9 LOWER TORSION LINK BUSHING	I.D.	1.3160 in (33.43) mm	1.3180 in (33.48) mm	1.3250 in (33.65) mm	0.010 in (0.25) mm
#9 UPPER TORSION LINK BUSHING	O.D.	1.3130 in (33.35) mm	1.3150 in (33.40) mm	1.3080 in (33.22) mm	

SUBTASK 32-21-31-020-015

(5) To install the torsion links or parts for the nose landing gear do the task that follows:

(a) Do this task: Nose Landing Gear Upper Torsion Link Installation, TASK 32-21-31-400-801.

(b) Do this task: Nose Landing Gear Lower Torsion Link Installation, TASK 32-21-31-400-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G75194 S0006575060_V2

Nose Landing Gear Torsion Wear Limits
Figure 601/32-21-31-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G75204 S0006575061_V3

Nose Landing Gear Torsion Wear Limits
Figure 601/32-21-31-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR LOWER TORSION LINK - REPAIR

1. General

A. This procedure has this task:

(1) Lower Torsion Link - Repair

TASK 32-21-31-350-801

2. Nose Landing Gear Lower Torsion Link - Repair

Figure 801

A. General

(1) This repair permits blends on the outer surfaces only. One blend per flange.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
51-00-58	STANDARD TREATMENT METHODS

C. Consumable Materials

Reference	Description	Specification
C00033	Coating - Protective Enamel, Flexibility Use	BMS10-60 Type II
C00175	Primer - Urethane Compatible, Corrosion Resistant	BMS10-79 Type III
C50005	Coating - Chemical Conversion - Bonderite M-CR 1200S Aero (Formerly Alodine 1200S)	BAC5719 Class A, C or D, MIL-DTL-81706 Type I Class 1A or 3

D. Location Zones

Zone	Area
713	Nose Landing Gear

E. Prepare for the Repair

SUBTASK 32-21-31-420-009

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801

F. Lower Torsion Link Repair

SUBTASK 32-21-31-350-001

(1) Blend out the defects within the limits and areas shown. Blends can be on the left flange or the right flange, or both, but only one blend is permitted on each flange. Blend out the defects 20:1 with the adjacent surfaces. If blends are necessary outside the limits or areas shown, ask Boeing for advice.Figure 801 See the figures for permitted blends.

(a) Perform a penetrant inspection (NDI) of the blended areas.

(b) Shot peen or flapper/roto-peen the blended areas. Intensity 0.008–0.013A2. Coverage 2.0

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Apply Bonderite M-CR 1200S Aero coating, C50005 to all blended areas.STANDARD TREATMENT METHODS, SUBJECT 51-00-58

(d) Apply one coat of BMS 10-79 type 3 primer, C00175 to the reworked areas.

(e) Apply BMS 10-60 type 2 gloss enamel coating, C00033 with a dry film thickness of 10.0.-12.0 mils (0.010–0.012 inch) to the reworked areas.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

ALL DIMENSIONS ARE IN INCHES

1 BLENDS PERMITTED ONLY ON THESE OUTER SURFACES. ONLY ONE BLEND PERMITTED ON EACH FLANGE, ON ONLY ONE OF THE TOP, SIDE, OR BOTTOM SURFACES

2002362 S0000392169_V2

Nose Landing Gear Lower Torsion Link Repair
Figure 801/32-21-31-990-803 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

ALL DIMENSIONS ARE IN INCHES

1 BLENDS PERMITTED ONLY ON THESE OUTER SURFACES. ONLY ONE BLEND PERMITTED ON EACH FLANGE, ON ONLY ONE OF THE TOP, SIDE, OR BOTTOM SURFACES

2 LIMIT FOR DEFECT REMOVAL

2002375 S0000392170_V2

Nose Landing Gear Lower Torsion Link Repair
Figure 801/32-21-31-990-803 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR CORROSION PREVENTION - MAINTENANCE PRACTICES

1. General

A. The nose landing gear fittings, especially at the attachment lugs, have been found susceptible to corrosion. Damaged paint finishes and plating are attributed to exposure to the weather elements and runway debris. Service wear and hard landings contribute to the galling of tile lugs at the fittings.

B. Anti-rotation lugs on the nose steering collar bearing assembly have been reported to shear resulting in excessive wear and corrosion. Improved bearing assemblies have been incorporated on airplanes from cum line No. 271. Corrosion has been reported on the steering collars on airplanes with the improved bearing assemblies and is attributed to lubrication escaping between the steering collar halves. On production airplanes, cum line No. 535 and on, the improved steering collars have been further modified by bonding a shim onto the aft steering collar and sealing with sealant, A00247 to prevent the grease running out.

C. Stress corrosion cracks have been reported on the nose landing gear lock brace assembly. All cracks originated at the intersection of the 0.875 and 0.250 inch diameter holes and propagated along the forging parting plane. A lock brace assembly of 7075-T73 material is the preferred replacement for those assemblies manufactured from 7073-T6 (Figure 201).

D. Stress corrosion has been the cause of a fractured nose gear piston fitting assembly. The improper shimming between the two lower legs of the fitting assembly and nose gear strut, permitted a hinge fit-up stress to develop in the fitting assembly and cause stress corrosion cracking (Figure 201).

E. Corrosion has been reported on the piston position spring cartridge assembly. The spring cartridge assembly separated from the upper rod end fitting. Bearing corrosion, believed to be the cause of bearing separation, is attributed to moisture collecting in the spring cartridge assembly (Figure 201).

F. Stress corrosion fracture has been reported on hydraulic transfer cylinder end caps. Aluminum is the material used on the fractured end caps.

G. Excessive corrosion has been reported on the nose landing gear torsion link pin and shaft (Figure 201).

TASK 32-21-37-600-801

2. CORROSION PREVENTION

A. Consumable Materials

Reference	Description	Specification
G00009	Compound - Organic Corrosion Inhibiting	BMS3-23
G01314	Tape - 3M Polyester Film Tape 8412	

B. General Philosophy

SUBTASK 32-21-37-210-001

(1) The basic corrosion prevention philosophy is to make periodic inspections to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or discolored deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

SUBTASK 32-21-37-210-002

(2) After the suspected areas are cleaned, a thorough inspection helps to ensure that protective finishes provided during manufacture remain intact.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-37-210-003

(3) Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads of joint edges), refer to Structural Repair Manual for details of corrosion removal.

SUBTASK 32-21-37-210-004

(4) For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by the application of a corrosion inhibiting compound into the affected area to slow the corrosion process. The finish system should be restored at the next maintenance opportunity.

C. Prevention Treatment

SUBTASK 32-21-37-610-001

(1) At the next maintenance opportunity, corrosion prevention treatment should be accomplished to the nose landing gear.

SUBTASK 32-21-37-610-004

CAUTION	DO NOT APPLY CORROSION INHIBITING COMPOUND ON GREASED JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

(2) Do preventive measures to these components (Figure 201).

NOTE: Apply corrosion inhibiting compound, G00009, to exposed outer surfaces only. Do not disassemble parts to apply the corrosion inhibiting compound. Do not spray into joints, linkages, pulleys, cables or bearings.

(a) Shock struts (Oleo). Apply corrosion inhibiting compound, G00009, to exterior areas of the inner and outer cylinder with broken finish systems. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibiting compound.

(b) Upper Drag Brace Links. Apply corrosion inhibiting compound, G00009, to exterior surface areas with broken finish systems. All lugs, lug faces, connecting pins, and fasteners should be sprayed with corrosion inhibiting compound, G00009.

(c) Axle. Apply corrosion inhibiting compound, G00009, to outside surface areas of the axle. Make suitable nozzle extension and spray the inside surfaces of the axle. At wheel removal spray the exterior surfaces of axle cover by wheel except at bearing or journal surfaces.

(d) Torsion Links. Apply corrosion inhibiting compound, G00009, to surface areas with broken finish systems. Lugs, lug faces, and connecting pins should be sprayed with corrosion inhibiting compound.

(e) Trunnion. Apply corrosion inhibiting compound, G00009, to exterior surface areas with broken finish systems. Lugs, lug faces, connecting pins, fasteners, and trunnion bearing caps should be sprayed with corrosion inhibiting compound, G00009.

(f) Lock Brace Assembly. Apply corrosion inhibiting compound, G00009, to surface areas of all components of the locking linkages with broken finish systems. Lugs, lug faces, and connecting pins should also be sprayed.

SUBTASK 32-21-37-610-005

(3) The installation of polyester 3M 8412 tape, G01314, under corrosion resistant steel clamps is recommended at overhaul to minimize the risk of galvanic corrosion should the finish be damaged.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Frequency of Application

SUBTASK 32-21-37-610-002

(1) Periodic inspection is required to areas identified as susceptible to corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

SUBTASK 32-21-37-610-006

(2) Periodic application of corrosion inhibiting compound, G00009, is necessary to areas identified and should be consistent to the scheduled specified in the Maintenance Planning Document.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

APPLY CORROSION INHIBITING COMPOUND (CIC) BMS3-23, TO EXPOSED OUTER SURFACES ONLY. DO NOT DISASSEMBLE PARTS TO APPLY CIC. DO NOT SPRAY INTO JOINTS, LINKAGES, PULLEYS, CABLES OR BEARINGS.

1445027 S0000261515_V3

Nose Landing Gear Corrosion Prevention
Figure 201/32-21-37-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STEERING COLLAR

B

1445049 S0000261520_V3

Nose Landing Gear Corrosion Prevention
Figure 201/32-21-37-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOCK BRACE ASSEMBLY

C

1445078 S0000261522_V3

Nose Landing Gear Corrosion Prevention
Figure 201/32-21-37-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SHOCK STRUT

D

1445105 S0000261523_V3

Nose Landing Gear Corrosion Prevention
Figure 201/32-21-37-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TORSION LINK

E

1445106 S0000261524_V3

Nose Landing Gear Corrosion Prevention
Figure 201/32-21-37-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR AXLE - INSPECTION/CHECK

1. General

A. This procedure supplies the detailed inspection of the nose landing gear axles for corrosion.

TASK 32-21-71-200-803

2. Nose Gear Axle Detailed Inspection for Corrosion

(Figure 601)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task gives the detailed inspection of the Nose Landing Gear (NLG) axles for corrosion.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-45-21-000-801	Nose Landing Gear Wheel and Tire Assembly - Removal (P/B 401)
32-45-21-400-801	Nose Landing Gear Wheel and Tire Assembly - Installation (P/B 401)

C. Consumable Materials

Reference	Description	Specification
G00440	Lockwire - MS20995C41, Corrosion Resistant Steel - 0.041 Inch (1.0414 mm) Diameter	NASM20995
G01043	Cloth - Lint-free	
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Cotter pin	32-45-21-03-020	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422

E. Location Zones

Zone	Area
713	Nose Landing Gear

F. Nose Gear Axle Detailed Inspection

SUBTASK 32-21-71-490-001

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-21-71-000-001

(2) Remove the NLG wheel and tire assembly, do this task: Nose Landing Gear Wheel and Tire Assembly - Removal, TASK 32-45-21-000-801.

SUBTASK 32-21-71-000-002

(3) For airplanes that use cotter pins [1], remove the cotter pins [1] in the axle spacer and remove the spacer from the axle.

SUBTASK 32-21-71-010-001

(4) For airplanes that use lockwire, remove the lockwire in the axle spacer and remove the spacer from the axle.

SUBTASK 32-21-71-200-001

(5) Examine the nose gear axles.

(a) Make sure that the spacer is removed when you inspect for corrosion on the NLG axle.

(b) Use a clean lint-free cloth, G01043, to remove grease and debris from the axle.

1) Do not use solvents or detergents to clean the axle.

(c) Do a detailed visual inspection aided with a magnifying glass in the NLG axles for corrosion or cracks caused by corrosion.

1) Pay special attention to the area that was under the axle spacer, and most importantly, at the 6 o'clock position on the axle.

2) If corrosion is detected on a NLG axle, contact Boeing for disposition.

NOTE: No corrosion is permitted on the axle. Corrosion can cause the axle to fracture and the wheel to depart the airplane.

SUBTASK 32-21-71-600-001

WARNING	DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(6) Apply a light layer of Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate) to the area underneath the axle spacer.

SUBTASK 32-21-71-420-001

(7) For airplanes that use cotter pins [1], make sure that the three cotter pins [1] are installed to hold the spacer on the axle.

(a) Make sure that the three cotter pins [1] installed on the spacer do not touch the lower torsion link lug during wheel installation.

SUBTASK 32-21-71-420-002

(8) For airplanes that use lockwire, make sure that MS20995C41 lockwire, G00440, is installed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure to bend the lockwire ends pigtails away from the inboard edge of the spacer (Figure 601).

(b) Examine the completed installation to make sure that the lockwire ends do not touch the axle or the torsion link lugs.

(c) Adjust the installed lockwire to make sure that the lockwire does not hit the landing gear parts during landing gear operations.

NOTE: Spacers that use lockwire have six holes.

SUBTASK 32-21-71-400-001

(9) Install the NLG wheel and tire assembly, do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, TASK 32-45-21-400-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Axle Spacer Lockwire and Cotter Pin Installation
Figure 601/32-21-71-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL DOORS - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the wheel well doors referred to as door assembly [3] for the nose landing gear

(2) An installation of the wheel well doors for the nose landing gear.

TASK 32-22-11-000-801

2. Nose Landing Gear Wheel Well Doors Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right

C. Prepare for the Removal

SUBTASK 32-22-11-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-22-11-480-002

(2) Install chocks around the tires of the nose landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Nose Wheel Well Doors Removal

SUBTASK 32-22-11-020-001

(1) Disconnect the bonding jumper [13] from the door hinge assembly [1]:

(a) Remove the nut [12] from the bolt [10].

(b) Remove the washers [11], and the bonding jumper [13] from the bolt [10].

(c) Remove the bolt [10], and the washer [9] from the door hinge assembly [1].

(d) Remove the washer [9] from the bolt [10].

SUBTASK 32-22-11-020-002

(2) Disconnect the center hinge assembly [2] from the lower pushrod assembly [17]:

(a) Remove the cotter pin [22], nut [21], and the washer [20] from the bolt [18].

(b) Remove the bolt [18] to disconnect the center hinge assembly [2] from the lower pushrod assembly [17].

SUBTASK 32-22-11-480-003

(3) Use a rope and attach the lower pushrod assembly [17] to the upper rod assembly.

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SUBTASK 32-22-11-020-003

(4) Disconnect the door assembly [3] from the center hinge bracket [24]:

(a) Remove the cotter pin [16], nut [15], and the washer [14] from the bolt [23].

(b) Remove the bolt [23] to disconnect the center hinge assembly [2] from the center hinge bracket [24].

SUBTASK 32-22-11-020-004

(5) Disconnect the door assembly [3] from the forward, and the aft hinge bracket [8]:

(a) Remove the cotter pin [6], nut [7], and the washer [5] from the bolt [4].

(b) Remove the bolt [4] to disconnect the door hinge assembly [1] from the hinge bracket [8].

——— END OF TASK ———

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Nose Landing Gear Wheel Well Doors Installation
Figure 401/32-22-11-990-801 (Sheet 1 of 2)

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Nose Landing Gear Wheel Well Doors Installation
Figure 401/32-22-11-990-801 (Sheet 2 of 2)

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TASK 32-22-11-400-801

3. Nose Landing Gear Wheel Well Doors Installation

(Figure 401)

A. References

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
32-22-11-000-802	Nose Landing Gear Wheel Well Doors Adjustment (P/B 501)
32-33-61-820-802	Nose Gear Wheel Well Door Linkage Adjustment and Check (P/B 501)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

C. Consumable Materials

Reference	Description	Specification
A50231	Sealant - Pressure And Environmental - Chromate Type	BMS5-95 Class B
A50337	Sealant - Fuel Tank	BMS5-45 Class B
A50359	Sealant - Low Density, Non-Chromate Type	BMS5-142 Type II Class B
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
C00175	Primer - Urethane Compatible, Corrosion Resistant	BMS10-79 Type III
C00700	Coating - Protective Enamel (BAC 707 Gray Color, Gloss)	BMS10-60 Type I
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	AMS3819 Class 1 Grade A or B Form 1 (Supersede BMS15-5 CL A)
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

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D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Door assembly	32-22-11-05-085	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450
		32-22-11-05-090	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450
		32-22-11-06-085	LOM 451-999
		32-22-11-06-090	LOM 451-999
6	Pin	32-22-11-05-035	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450
		32-22-11-06-045	LOM 451-999
16	Pin	32-22-11-05-055	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450
		32-22-11-06-065	LOM 451-999
17	Pushrod assembly	32-33-61-01A-180	LOM ALL
22	Pin	32-22-11-01A-065	LOM ALL

E. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right

F. Nose Wheel Well Doors Installation

NOTE: A NLG door rigging check is not necessary if reinstalling the same NLG door that was removed and no changes to the adjustments to the door stops, door seals, door hinges, or door pushrods were made.

SUBTASK 32-22-11-420-001

(1) Connect the door assembly [3] to the forward, and the aft hinge bracket [8]:

(a) Hold the door assembly [3] in its position in the hinge bracket [8].

(b) Align the hole in the door hinge assembly [1] to the hole in the hinge bracket [8].

(c) Put the bolt [4] through the hinge bracket [8], and the door hinge assembly [1].

(d) Install the washer [5], and the nut [7] on the bolt [4].

NOTE: The pin [6] will installed after final adjustments to the door assembly are made in the subsequent step.

(e) Hand tighten the nut [7] until after final adjustments to the door assembly [3] are made in the subsequent step.

SUBTASK 32-22-11-420-002

(2) Connect the door assembly [3] to the center hinge bracket [24]:

(a) Put the center hinge assembly [2] in its position in the center hinge bracket [24].

(b) Align the hole in the center hinge assembly [2] to the hole in the center hinge bracket [24].

(c) Put the bolt [23] through the center hinge bracket [24], and the center hinge assembly [2].

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(d) Install the washer [14], and the nut [15] on the bolt [23].

NOTE: The pin [16] will installed after final adjustments to the door assembly are made in the subsequent step.

(e) Hand tighten the nut [15] until after final adjustments to the door assembly [3] are made in the subsequent step.

SUBTASK 32-22-11-420-003

(3) Connect the center hinge assembly [2] to the lower pushrod assembly [17]:

(a) Put the end of the lower pushrod assembly [17] in its position on the center hinge assembly [2].

(b) Align the end of the lower pushrod assembly [17] to the hole in the center hinge assembly [2].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION AGAINST BMS 3-38 (COR-BAN 27L COMPOUND). IF COR-BAN 27L GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER AND GET MEDICAL AID. THIS MATERIAL CONTAINS VERY POISONOUS AND FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONS.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(c) Apply a thin layer of Cor-Ban 27L Compound, G50237 to these items:

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

1) The threads and thread reliefs of the bolt [18] and the nut [21] and the faces of the washer [20].

(d) Put the bolt [18] through the center hinge assembly [2] and the lower pushrod assembly [17].

(e) Install the washer [20], and the nut [21] on the bolt [18].

NOTE: The pin [22] will installed after final adjustments to the door assembly are made in the subsequent step.

(f) Hand tighten the nut [21] until after final adjustments to the door assembly [3] are made in the subsequent step.

SUBTASK 32-22-11-120-001

(4) Prepare the mating surfaces of the door hinge assembly [1], bonding jumper [13], washer [9], washers [11], bolt [10], and nut [12].

(a) To fully clean the mating surface of the door hinge assembly [1], do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

(b) Use the cotton wiper, G00034, moist in solvent, B00184, to clean the mating surfaces of the bonding jumper [13], washer [9], washers [11], bolt [10], and nut [12].

SUBTASK 32-22-11-020-005

(5) Connect the bonding jumper [13] to the door hinge assembly [1]:

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(a) Put the bonding jumper [13] in its position on the door hinge assembly [1].

(b) Install the washer [9] on the bolt [10].

(c) Put the bolt [10] through the door hinge assembly [1], washer [11], bonding jumper [13], and washer [11].

(d) Install the nut [12] on the bolt [10].

(e) Tighten the nut [12] to 28 in-lb (3.2 N·m) - 35 in-lb (4.0 N·m).

SUBTASK 32-22-11-280-001

(6) Measure the electrical bonding resistance between the door hinge assembly [1] and bonding jumper [13] (SWPM 20-20-00).

(a) Use the intrinsically safe approved bonding meter, COM-1550.

(b) Make sure that the electrical bonding resistance is 0.001 ohm (1.0 milliohms) or less.

SUBTASK 32-22-11-390-001

(7) Apply a fillet seal with sealant, A50337, or sealant, A50231, or sealant, A50359, to cover the bolt [10], washer [9], washers [11], and nut [12].

SUBTASK 32-22-11-110-001

(8) Refinish the abraded surfaces as follows:

(a) Apply one coat of primer, C00175.

(b) Apply coating, C00700.

SUBTASK 32-22-11-420-004

(9) Adjust the wheel well doors for the nose landing gear, do this task: Nose Landing Gear Wheel Well Doors Adjustment, TASK 32-22-11-000-802.

SUBTASK 32-22-11-420-005

(10) Adjust the lower pushrod assembly [17], do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, TASK 32-33-61-820-802.

SUBTASK 32-22-11-420-010

(11) Tighten the nut [7] and install the cotter pin [6] in the hole in the bolt [4].

(a) If it is necessary, loosen the nut [7] to the nearest castellation to align the hole in the bolt [4].

SUBTASK 32-22-11-420-011

(12) Tighten the nut [15] and install the cotter pin [16] in the hole in the bolt [23]..

(a) If it is necessary, loosen the nut [15] to the nearest castellation to align the hole in the bolt [23]

SUBTASK 32-22-11-420-012

(13) Tighten the nut [21] and install the cotter pin [22] in the hole in the bolt [18].

(a) If it is necessary, loosen the nut [21] to the nearest castellation to align the hole in the bolt [18].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL DOORS - ADJUSTMENT/TEST

1. General

A. This procedure has this task:

(1) An adjustment of the wheel well doors for the nose landing gear.

TASK 32-22-11-000-802

2. Nose Landing Gear Wheel Well Doors Adjustment

(Figure 501)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-33-00-710-801	Operational Test for the Nose Landing Gear (P/B 501)
32-33-61-820-802	Nose Gear Wheel Well Door Linkage Adjustment and Check (P/B 501)

B. Consumable Materials

Reference	Description	Specification
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right

D. Prepare for the Adjustment

SUBTASK 32-22-11-480-004

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

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SUBTASK 32-22-11-580-001

> **CAUTION** MAKE SURE THAT YOU REMOVE THE JACK STAND AT JACK POINT C (AFT BODY) BEFORE YOU LIFT THE AIRPLANE NOSE. IF YOU DO NOT OBEY, DAMAGE TO THE AIRPLANE AND EQUIPMENT CAN OCCUR.

(2) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-22-11-480-005

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-22-11-020-006

(4) Disconnect the pushrod [12] from the center door hinge [24].

(a) Remove the cotter pin [19], nut [18], and washer [17] from the bolt [16].

(b) Remove the bolt [16] to disconnect the pushrod [12] from the center door hinge [24].

SUBTASK 32-22-11-080-003

(5) Remove the downlock pin for the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-22-11-860-002

(6) Retract the nose landing gear, do this task: Operational Test for the Nose Landing Gear, TASK 32-33-00-710-801.

E. Nose Wheel Well Doors Adjustment

NOTE: No adjustments will be made to the hinge fittings mounted on the doors.

SUBTASK 32-22-11-210-001

(1) Make sure that you can turn the bolt [20] by hand.

(a) If not, adjust the center hinge bracket [25] as follows:

1) Loosen the bolts [10] in the center hinge bracket [25].

2) Move the center hinge bracket [25] up or down until you can move the bolt [20] by hand.

3) Tighten the bolts [10] in the center hinge bracket [25].

a) Make sure that the bolt [20] is free to move with hand pressure after the tightening of the bolts [10].

SUBTASK 32-22-11-210-003

(2) Make sure that you can turn the bolt [20] by hand.

(a) If not, adjust the center hinge bracket [25] as follows:

1) Remove the cotter pin [22], nut [21] and washer [23] from the bolt [20].

2) Remove the bolt [20] that connects the center door hinge [24] to the center hinge bracket [25].

3) Remove the bolts [10] and washers [11] to disconnect the center hinge bracket [25] from the bulkhead.

NOTE: The nutplates for the bolts are on the opposite side of the bulkhead.

4) Remove the plate [9] and the shim [8] from the bulkhead.

a) If the shim [8] was not installed, install the shim [8] to get the proper adjustment.

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b) If the shim [8] was installed, remove the shim [8] to get the proper adjustment.

5) Install the plate [9] and center hinge bracket [25] on the bulkhead.

6) Install the bolts [10] and washers [11].

a) Make sure the bolts [10] are only hand tight.

NOTE: The bolts will be tightened after the center hinge bracket is adjusted.

7) Install the bolt [20], washer [23] and nut [21] to connect the center door hinge [24] to the center hinge bracket [25].

8) Tighten the nut [21] and install the cotter pin [22] in the hole in the bolt [20].

a) If it is necessary, loosen the nut [21] to the nearest castellation to align the hole in the bolt [20].

9) If it is necessary, move the center hinge bracket [25] up or down until you can turn the bolt [20] by hand.

10) Tighten the bolts [10] in the center hinge bracket [25].

a) Make sure that the bolt [20] is free to move with hand pressure after the tightening of the bolts [10].

SUBTASK 32-22-11-820-001

(3) Manually close the door assembly [4] that you will adjust.

SUBTASK 32-22-11-820-002

(4) Make sure that the fit on the forward edge and aft edge of the door assembly [4], and the surrounding structure is in the tolerance as follows:

(a) Record the fit values that are not in tolerance.

(b) Use the "ALL" tolerances for all airplane forward door flushness checks (Table 501).

Table 501/32-22-11-993-801 Nose Landing Gear Wheel Well Door Flushness Values

AIRPLANE EFFECTIVITY	EDGE ZONE	FLUSHNESS (MISMATCH) IN INCHES (mm)
ALL	A-A	0.0 ± 0.06 inch (± 1.52 mm) (In Streamwise Direction)
ALL	B	0.0 ± 0.06 inch (± 1.52 mm) (In Streamwise Direction)
ALL	C	0.0 + 0.03 inch (+0.76 mm) (Door outside wheel well) - -0.06 inch (-1.52 mm) (Door inside wheel well)
ALL	D	0.0 + 0.03 inch (+0.76 mm) (Door inside wheel well) - -0.06 inch (-1.52 mm) (Door outside wheel well)

WHEEL WELL DOOR FLUSHNESS DIAGRAM

A negative tolerance (-) indicates the face of the mismatch faces aft.

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Table 501/32-22-11-993-801 Nose Landing Gear Wheel Well Door Flushness Values (Continued)

AIRPLANE EFFECTIVITY	EDGE ZONE	FLUSHNESS (MISMATCH) IN INCHES (mm)
+ ------> Air Stream (V)	(POSITIVE MISFAIR)	A positive tolerance (+) indicates the face of the mismatch is into the air stream.

SUBTASK 32-22-11-020-007

(5) If the mismatch along the forward and aft edge is not in tolerance, do the steps that follow:

(a) Remove the pin retainer spring [2] from the stop pin [1].

NOTE: The stop pin is on the wheel well bulkhead.

NOTE: MS20995C32 lockwire, G01048, or equivalent safety wire can be installed on the stop pin in lieu of the pin retainer spring.

(b) Retract the stop pin [1] for the door assembly [4].

(c) Adjust the stop pin [1] on the forward wheel well bulkhead until it just touches the forward/inboard door stop pad [3] on the forward edge of the door assembly [4].

SUBTASK 32-22-11-420-006

(6) Install the pin retainer spring [2] on the stop pin [1].

NOTE: MS20995C32 lockwire, G01048, or equivalent safety wire can be installed on the stop pin in lieu of the pin retainer spring.

(a) If you use the MS20995C32 lockwire, G01048, or equivalent safety wire, make sure that the stop pin [1] cannot rotate after the safety wire is installed.

SUBTASK 32-22-11-210-002

(7) Make sure that the fit along the outboard edges of the door assembly [4] and surrounding structure is in the tolerance shown on Figure 501.

(a) Record the fit values that are not in tolerance.

(b) Make sure that the landing gear door seals do not interfere with the operation of the doors.

SUBTASK 32-22-11-820-003

(8) Make sure that the fit around the door assembly [4] is in the tolerance shown on Figure 501.

NOTE: This should only be necessary for a new door.

(a) Use the "ALL" tolerances for the airplane door clearance checks (Table 502).

Table 502/32-22-11-993-804 Nose Landing Gear Wheel Well Door Clearance Values

AIRPLANE EFFECTIVITY	EDGE ZONE	CLEARANCE
ALL	A-A	0.10 +0.10/-0.05 in 2.54 +2.54/-1.27 mm
ALL	B	0.20 +0.05/-0.02 in 5.08 +1.27/-0.51 mm
ALL	C	0.15 +0.06/-0.09 in 3.81 +1.52/-2.29 mm

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Table 502/32-22-11-993-804 Nose Landing Gear Wheel Well Door Clearance Values (Continued)

AIRPLANE EFFECTIVITY	EDGE ZONE	CLEARANCE
ALL	D	0.10 +0.06/-0.04 in 2.54 +1.52/-1.02 mm
ALL	E	0.31 +0.04/-0.25 in 7.87 +1.02/-6.35 mm

SUBTASK 32-22-11-820-007

(9) If the mismatch along the outboard edge is not in tolerance, do the steps that follow:

(a) Remove the bolts [29] and washers [30] from the forward hinge bracket [36].

(b) Remove the shims [27] or add the correct thickness of the shims below the plate [28] of the forward hinge bracket [36].

(c) Put the bolt [31] through the forward hinge bracket [36] and door hinge [35].

(d) Install the washer [32] and nut [33] on the bolt [31].

(e) Tighten the nut [33] and install the pin [34].

(f) Close the door assembly [4] with your hand.

SUBTASK 32-22-11-820-005

(10) Do the same steps for the aft hinge bracket.

SUBTASK 32-22-11-820-006

(11) Align the external outboard surface of the door with the fuselage skin surface.

SUBTASK 32-22-11-020-008

(12) Loosen the four bolts [29] in each of the forward hinge bracket [36] and aft hinge brackets or the aft door.

(a) Move each hinge bracket until the serrations of the hinge bracket align with the serrations in the plate [28].

NOTE: The outboard external edge of the door must align with the adjacent fuselage skin.

SUBTASK 32-22-11-420-007

(13) Tighten the four bolts [29] in each of the forward and aft hinge brackets.

SUBTASK 32-22-11-420-008

(14) If not connected, connect the center door hinge [24] to the pushrod [12] as follows:

(a) Put the end of the pushrod [12] in its position on the center door hinge [24].

(b) Align the end of the pushrod [12] to the hole in the center door hinge [24].

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE CORBAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

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(WARNING PRECEDES)

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(c) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

1) The threads and thread reliefs of the bolt [16], nut [18], and faces of the washer [17].

(d) Put the bolt [16] through the center door hinge [24] and pushrod [12].

(e) Install the washer [17] and nut [18] on the bolt [16].

(f) Hand tighten the nut [18] until after final adjustments to the pushrod [12] are made in the subsequent step.

(g) Make sure that the upper pushrod [12] dimension of 30.77 ±0.01 in. (781.56 ±0.25 mm) is maintained and threads are visible through the witness holes to reach adjustment values.

NOTE: Threads of the rods ends do not need to cover the witness holes.

SUBTASK 32-22-11-420-009

(15) Do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, TASK 32-33-61-820-802.

SUBTASK 32-22-11-420-013

(16) Tighten the nut [18] and install the cotter pin [19] in the hole in the bolt [16].

(a) If it is necessary, loosen the nut [18] to the nearest castellation to align the hole in the bolt [16].

——— END OF TASK ———

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Nose Landing Gear Wheel Well Doors Adjustment
Figure 501/32-22-11-990-802 (Sheet 1 of 3)

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Nose Landing Gear Wheel Well Doors Adjustment
Figure 501/32-22-11-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Wheel Well Doors Adjustment
Figure 501/32-22-11-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR CONTROL SYSTEM - ADJUSTMENT/TEST

1. General

A. You will adjust the control system for the landing gear when you have one of these conditions:

(1) A component is replaced

(2) The cable tension is more than +/- 15 pounds (+/- 67 newtons) from the in Table: Refer to Figure 501 (Sheet 5).

NOTE: The push/pull cable and gearbox assembly (Teleflex cable) adjustment is done in a separate procedure. This assembly connects the Landing Gear Control Lever in the flight deck to the forward quadrant housing assembly. It does not require adjustment under normal operating conditions.

TASK 32-31-00-820-801

2. Landing Gear Control System Adjustment

(Figure 501)

A. General

(1) It is recommended that airplanes supplied with the cables that contain higher zinc coating (Grade D or Grade K) be re-tensioned 3 to 4 months into service. This will bring the tension of the control cables within the desired range. After the cables are re-tensioned the high zinc cables (Grade D or Grade K) will continue to relax at a rate that is equivalent to the Grade B cables.

(2) It is recommended that cable assemblies on each side of a cable loop be replaced at the same time using the same cable grade material in order to minimize asymmetric relaxation.

B. References

Reference	Title
29-09-00-860-801	Hydraulic Reservoirs Pressurization (P/B 201)
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1553	Tensiometer - Cable, Low Tension (200 lbs and below) Part #: 102-03108 Supplier: 21844 Part #: 102-03120 Supplier: 21844 Part #: ACM-200 Supplier: 13331 Part #: ACX-250-1 Supplier: 13331 Part #: T60-1001-C8-1A Supplier: 0N8U4
COM-1554	Tensiometer - Cable, High Tension (200 lbs and above) Part #: 102-03120 Supplier: 21844 Part #: ACM-300 Supplier: 13331 Part #: ACM-600 Supplier: 13331 Part #: ACX-500-1 Supplier: 13331 Part #: T5-8008-106-00 Supplier: 0N8U4 Part #: T60-1001-C9-1A Supplier: 0N8U4

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(Continued)

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
112A	Forward Access Door

F. Prepare for the Adjustment

SUBTASK 32-31-00-860-001

(1) For hydraulic systems A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-00-860-023

(2) Remove the hydraulic pressure, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

(a) Make sure that the Landing Gear Control System is depressurized and locked out.

SUBTASK 32-31-00-820-005

(3) Final control cable adjustments can only be performed on a temperature stabilized airplane.

(a) An airplane is considered temperature stabilized when the following requirements are met:

1) The outside ambient temperature has not changed by more than 5 degrees F over the last hour.

2) The outside ambient temperature does not change at a rate greater than 5 degrees F per hour while the cables are being tensioned.

3) The airplane is not in direct sunlight OR the following procedure indicates temperatures are stabilized.

a) Measure temperatures at the following locations:

- Inside: Near the center of each compartment that the cable run passed through or is adjacent to including passenger cabin, Electronic Equipment (EE) bay, and forward cargo compartment.
- Outside: Within 5 in. (13 cm) of the fuselage skin on both the left and right sides just below the forward entry doors (two locations).

b) If the difference between the lowest and highest recorded temperature is less than 5 degrees F, the airplane can be considered temperature stabilized.

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4) The entry doors, cargo doors, and EE bay access hatch have been open for at least one hour and will remain open while the cables are being tensioned OR measured temperatures inside are within 5 degrees F of the measured outside temperatures.

5) There are no significant sources of heat inside the airplane that may cause the internal temperature in any compartment to be 5 degrees F or more above the ambient temperature.

SUBTASK 32-31-00-010-001

(4) To get access to the turnbuckles, do this step:

(a) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-31-00-480-006

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-00-020-003

(6) Disconnect the link assembly between the selector valve and bellcrank.

NOTE: If you can freely install the rig pin and get good cable tensions, it is not necessary to disconnect the link assembly.

G. Landing Gear Control System Adjustment

SUBTASK 32-31-00-860-002

(1) Put the control lever for the landing gear in the OFF position.

SUBTASK 32-31-00-480-002

(2) Install the rig pin LGE1 from the rigging pin kit, SPL-1585, in the bellcrank and structure.

SUBTASK 32-31-00-820-001

(3) If you installed new cables, before final adjustment of the cable rig loads, do the following steps:

(a) Use the high tension cable tensiometer, COM-1554, to adjust the cables LGVA and LGVB at the turnbuckles to 300 lb (136 kg).

(b) Make sure that the rig pin LGE1 has a free fit and remove the rig pin.

(c) Operate the control lever for the landing gear from the OFF position to the DN position to the UP position and back to the DN position 25 times.

(d) Put the control lever to the OFF position and make sure that the rig pin LGE1 has a free fit.

SUBTASK 32-31-00-820-002

(4) Adjust the cable tension in the cables LGVA and LGVB.

(a) Use the low tension cable tensiometer, COM-1553, to adjust the cables LGVA and LGVB at the turnbuckles to the values in Table A (Figure 501).

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(b) Adjust to get a free fit of the rig pin LGE1.

NOTE: Rig cable loads when the temperature of the airplane inside and outside is the same. The temperature of the airplane should be stable for one hour before you adjust the cables.

SUBTASK 32-31-00-080-001

(5) Remove the rig pin LGE1.

SUBTASK 32-31-00-860-003

(6) Operate the control lever for the landing gear from the OFF position to the DN position to the UP position and back to the OFF position.

(a) Make sure that the landing gear control lever moves freely without sticking or binding.

SUBTASK 32-31-00-480-003

(7) Install the rig pin LGE1.

SUBTASK 32-31-00-820-003

(8) Use the low tension cable tensiometer, COM-1553, to do a check on the cable tension per Table A again (Figure 501).

SUBTASK 32-31-00-820-004

(9) If it is necessary, adjust the cables LGVA and LGVB.

SUBTASK 32-31-00-410-002

(10) If removed, install the clips on the turnbuckles for cables LGVA and LGVB after adjustments are completed.

SUBTASK 32-31-00-080-002

(11) Remove the rig pin LGE1.

SUBTASK 32-31-00-420-003

(12) If it is necessary, connect the link assembly between the selector valve and bellcrank.

SUBTASK 32-31-00-410-001

(13) Install the panel that was removed to access the turnbuckles, do this step:

(a) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-31-00-860-024

(14) Supply the hydraulic pressure, do this task: Hydraulic Reservoirs Pressurization, TASK 29-09-00-860-801.

SUBTASK 32-31-00-730-009

(15) Do this task: System Test - Landing Gear Control System, TASK 32-31-00-730-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G11995 S0006575085_V2

Landing Gear Control System Adjustment
Figure 501/32-31-00-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G12007 S0006575086_V2

Landing Gear Control System Adjustment
Figure 501/32-31-00-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G12062 S0006575087_V3

Landing Gear Control System Adjustment
Figure 501/32-31-00-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

D

FORCE GAGE EQUIPMENT INSTALLED ON CONTROL LEVER

E

G12086 S0006575088_V2

Landing Gear Control System Adjustment
Figure 501/32-31-00-990-801 (Sheet 4 of 5)

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MLG CABLE TENSION CHART	
TEMP ˚ F±5˚	RIGGING LOAD LBS (+10/-0)
130 (54.444° C)	176 (79.834 kg)
110 (43.333° C)	167 (75.751 kg)
90 (32.22° C)	158 (71.669 kg)
70 (21.111° C)	150 (68.04 kg)
50 (10° C)	141 (63.958 kg)
30 (-1.111° C)	133 (60.329 kg)
10 (-12.22° C)	124 (56.246 kg)
-10 (-23.33° C)	115 (52.164 kg)
-30 (-34.44° C)	107 (48.535 kg)
-40 (-40° C)	102 (46.267 kg)

TABLE A

NOTE:

CABLE RIG LOADS MUST BE WITHIN 0 TO +10 POUNDS OF TABLE A VALUES WHEN THE SYSTEM IS BEING RIGGED. SYSTEM MUST BE RE-RIGGED WHEN CABLE LOADS DEVIATE MORE THAN ±15 POUNDS FROM TABLE A VALUES.

CABLE CODE	FUNCTION
LGVA	LANDING GEAR UP
LGVB	LANDING GEAR DOWN

TABLE B

G12125 S0006575089_V3

Landing Gear Control System Adjustment
Figure 501/32-31-00-990-801 (Sheet 5 of 5)

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TASK 32-31-00-730-802

3. System Test - Landing Gear Control System
(Figure 501)

A. References

Reference	Title
27-62-61-400-806	Ground Spoiler Interlock Valve Proximity Sensor Functional Test (P/B 501)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-146 Supplier: 81205
SPL-6190	Force Gage Equipment - Landing Gear Lever, Flight Deck Part #: G32021-18 Supplier: 81205

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Prepare for the System Test

SUBTASK 32-31-00-860-004

(1) For hydraulic systems A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-00-480-004

WARNING: OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(2) Make sure that the downlock pins are installed on the nose and main landing gear. If it is necessary, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-00-860-007

(3) Do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

NOTE: You must use the deactuators to put the airplane in the air mode or put the airplane on jacks. You cannot use the PSEU BITE for this test.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Procedure

SUBTASK 32-31-00-860-019

(1) If the deactuators are used to put the airplane in the air mode, put an actuator on the Ground Spoiler Interlock Valve Close Sensor (S1050).

NOTE: The actuator is part of this test set: proximity sensor test set, SPL-1690. For information on the Ground Spoiler Interlock Valve Close Sensor, refer to this task: (Ground Spoiler Interlock Valve Proximity Sensor Functional Test, TASK 27-62-61-400-806).

SUBTASK 32-31-00-860-008

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-31-00-860-009

(3) Put the control handle for the landing gear in the DN position.

SUBTASK 32-31-00-480-005

(4) Install the force gage equipment, SPL-6190, on the control lever for the landing gear.

SUBTASK 32-31-00-720-001

(5) Pull the control lever for the landing gear out of the DN detent.

(a) Make sure that the force necessary to pull the control lever out of the detent is not more than 12 lbf (53 N).

SUBTASK 32-31-00-720-002

(6) Move the control lever for the landing gear to the UP position.

(a) Make sure that the tangential force, the force that is perpendicular to the in and out movement of the control lever, necessary to move the control lever is not more than 12 lbf (53 N).

SUBTASK 32-31-00-080-003

(7) Remove the force gage equipment, SPL-6190, from the control lever.

SUBTASK 32-31-00-730-003

(8) Pull completely out and release the control lever in the UP detent.

(a) Make sure that the control lever goes freely into the detent and to the bottom of the detent without a push.

SUBTASK 32-31-00-860-010

(9) Move the control lever to the OFF position.

SUBTASK 32-31-00-730-004

(10) Pull completely out and release the control lever in the OFF detent.

(a) Make sure that the control lever goes freely into the detent and to the bottom of the detent without a push.

SUBTASK 32-31-00-860-011

(11) Move the control lever to the DN position.

SUBTASK 32-31-00-730-005

(12) Pull completely out and release the control lever in the DN detent

(a) Make sure that the control lever goes freely into the detent and to the bottom of the detent without a push.

SUBTASK 32-31-00-860-012

(13) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-31-00-730-006

(14) Do not use the lock override trigger and try to move the control lever for the landing gear to the UP position.

(a) Make sure that the control lever will not move to the UP position.

SUBTASK 32-31-00-730-007

(15) Operate the lock override trigger and move the control lever for the landing gear to the UP position.

SUBTASK 32-31-00-860-013

(16) Put the control lever to the OFF position.

SUBTASK 32-31-00-860-020

(17) Do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

NOTE: You must use the deactuators to put the airplane in the air mode or put the airplane on jacks. You cannot use the PSEU BITE for this test.

SUBTASK 32-31-00-860-021

(18) If the deactuators are used to put the airplane in the air mode, make sure that the actuator is installed on the Ground Spoiler Interlock Valve Close Sensor (S1050).

SUBTASK 32-31-00-730-008

(19) Do not use the lock override trigger and try to move the control lever for the landing gear to the UP position.

(a) Make sure that the control lever will move to the UP position.

SUBTASK 32-31-00-860-015

(20) Put the control lever to the DN position.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-31-00-860-016

(1) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 32-31-00-860-017

(2) For hydraulic systems A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-00-860-022

(3) If the deactuators are used to put the airplane in the air mode, remove the actuator from the Ground Spoiler Interlock Valve Sensor (S1050).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR CONTROL LEVER MODULE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the landing gear control lever module

(2) An installation of the landing gear control lever module.

TASK 32-31-11-020-801

2. Landing Gear Control Lever Module Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
34-61-01-000-802	FMCS Control Display Unit (CDU) Removal (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Removal

SUBTASK 32-31-11-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear.

(a) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-11-860-001

(2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

D. Landing Gear Control Lever Module Removal

SUBTASK 32-31-11-010-001

(1) Turn the two quick-release fasteners on the front of the control lever module [1] and remove the lightplate/baseplate assembly [2].

(a) If it is necessary, disconnect the electrical connector from the lightplate/baseplate assembly [2].

SUBTASK 32-31-11-010-002

(2) Remove the P2-2 panel.

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SUBTASK 32-31-11-010-003

(3) Remove the first officer's FMC CDU from the forward aisle stand, do this task: FMCS Control Display Unit (CDU) Removal, TASK 34-61-01-000-802.

SUBTASK 32-31-11-010-004

(4) Turn the quick-release fasteners to remove the plate [5] from the forward side of the FMC CDU space in the aisle stand.

NOTE: This will give you access to the bolt that is at the back of the control lever module, on the bottom.

SUBTASK 32-31-11-020-001

(5) Remove the screws [3] and washers [4] that attach the control lever module [1] to the panel structure.

SUBTASK 32-31-11-020-002

(6) Remove the bolts [7] and washers [6] that attach the control lever module [1] to the structure.

SUBTASK 32-31-11-020-003

(7) Remove the screws [13] and washers [14] to disconnect the teleflex cable [12] from the control lever module [1].

SUBTASK 32-31-11-020-004

(8) Remove the bolts [11], washers [8], pin retainer [10], and pin [9] to disconnect the teleflex cable [12] from the control lever module [1].

SUBTASK 32-31-11-020-005

(9) Move the control lever module [1] out of the panel structure to get access to the electrical connector on its top.

SUBTASK 32-31-11-020-006

(10) Disconnect the electrical connector from the control lever module [1].

SUBTASK 32-31-11-020-007

(11) Remove the control lever module [1] from the airplane.

——— END OF TASK ———

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Landing Gear Control Lever Module Installation
Figure 401/32-31-11-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Landing Gear Control Lever Module Installation
Figure 401/32-31-11-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Landing Gear Control Lever Module Installation
Figure 401/32-31-11-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-11-400-801

3. Landing Gear Control Lever Module Installation

(Figure 401)

A. References

Reference	Title
27-88-00-710-801	Leading Edge Flap and Slat Position Indicating System - Operational Test (P/B 501)
31-62-00-710-801	Common Display System - Operational Test (P/B 501)
32-31-00-730-802	System Test - Landing Gear Control System (P/B 501)
32-42-00-720-801	Antiskid/Autobrake Control Unit Operational Test (P/B 501)
34-61-01-400-802	FMCS Control Display Unit (CDU) - Installation (P/B 401)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Consumable Materials

Reference	Description	Specification
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Landing Gear Control Lever Module Installation

SUBTASK 32-31-11-420-001

(1) Put the control lever module [1] in a position to attach the teleflex cable [12].

SUBTASK 32-31-11-420-002

(2) Before you connect the electrical connector to the control lever module [1], examine the connector for corrosion.

> **WARNING**
> DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If you find the corrosion, correct the problem (SWPM 20-60-03).

(b) Apply D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

SUBTASK 32-31-11-430-001

(3) Connect the electrical connector to the control lever module [1].

SUBTASK 32-31-11-420-003

(4) Put the teleflex cable [12] through the back of the control lever module [1].

SUBTASK 32-31-11-420-010

(5) Install the screws [13] and washers [14] that attach the flange to the back of the control lever module [1].

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SUBTASK 32-31-11-420-004

(6) Install the pin [9] that attaches the teleflex cable [12] to the control lever.

SUBTASK 32-31-11-420-005

(7) Install the pin retainer [10], washers [8], and bolts [11].

SUBTASK 32-31-11-420-006

(8) Move the control lever module [1] into position in the panel structure.

SUBTASK 32-31-11-420-007

(9) Install the bolts [7] and washers [6] that attach the bottom of the control lever module [1] to the panel structure.

SUBTASK 32-31-11-420-008

(10) Install the screws [3] and washers [4] that attach the top of control lever module [1] to the panel structure.

SUBTASK 32-31-11-420-009

(11) Install the lightplate/baseplate assembly [2] on the control lever module [1].

SUBTASK 32-31-11-860-004

(12) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

SUBTASK 32-31-11-710-001

(13) Do the test of the landing gear control system, do this task: System Test - Landing Gear Control System, TASK 32-31-00-730-802.

SUBTASK 32-31-11-710-002

(14) If the electrical connector was disconnected from the lightplate/baseplate assembly [2], do these steps:

NOTE: These steps are only required if the electrical connector for the landing gear position lights was disconnected to access the landing gear control lever module.

(a) Connect the electrical connector to the lightplate/baseplate assembly [2].

(b) Put the master dim and test lights switch, on the P1-3 main instrument panel, to the TEST position.

(c) Make sure that the landing gear indication lights come on.

(d) Put the master dim and test lights switch, on the P1-3 main instrument panel, to the OFF position.

SUBTASK 32-31-11-410-001

(15) Install the plate [5] that you removed from the forward side of the Flight Management Computer (FMC) Control Display Unit (CDU) space in the aisle stand.

SUBTASK 32-31-11-410-002

(16) Install the first officer's FMC CDU in the forward aisle stand, do this task: FMCS Control Display Unit (CDU) - Installation, TASK 34-61-01-400-802.

SUBTASK 32-31-11-410-003

(17) Install the P2-2 panel.

SUBTASK 32-31-11-480-002

(18) Test the P2-2 Panel:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	12	C00314	INDICATOR MASTER DIM SECT 2
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD
F	11	C00317	INDICATOR MASTER DIM SECT 5

(b) Do this task: Antiskid/Autobrake Control Unit Operational Test, TASK 32-42-00-720-801.

(c) Do the Engine Control Module Operational Test (TASK 31-62-00-710-801).

(d) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

(e) Do this task: Leading Edge Flap and Slat Position Indicating System - Operational Test, TASK 27-88-00-710-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR FORWARD QUADRANT HOUSING ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the forward quadrant housing assembly (referred to as the housing assembly [1]) for the landing gear

(2) An installation of the housing assembly [1] for the landing gear.

TASK 32-31-21-020-801

2. Landing Gear Forward Quadrant Housing Assembly Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Removal

SUBTASK 32-31-21-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) For the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-21-580-001

(2) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-31-21-860-001

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

E. Forward Quadrant Housing Assembly Removal

SUBTASK 32-31-21-020-001

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

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NOTE: You can find the turnbuckles in the area in front of the nose wheel well behind the forward access door panel.

(2) Remove the clips from the turnbuckles and loosen the cables LGVA and LGVB.

SUBTASK 32-31-21-020-002

(3) Remove the pins [2] that hold cables LGVA and LGVB to the housing assembly [1].

SUBTASK 32-31-21-020-003

(4) Remove the bolts [9] and washers [6] from teleflex cable assembly.

SUBTASK 32-31-21-020-004

(5) Remove the teleflex cable assembly from the housing assembly [1].

SUBTASK 32-31-21-020-005

(6) Loosen the nuts [5], washers [7], and bolts [4] to permit removal of the brackets [3] that are part of the housing assembly [1].

SUBTASK 32-31-21-020-006

(7) Remove the nuts [5], washers [6], and bolts [4, 8] from the housing assembly [1].

SUBTASK 32-31-21-020-007

(8) Remove the housing assembly [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Forward Quadrant Housing Installation
Figure 401/32-31-21-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Forward Quadrant Housing Installation
Figure 401/32-31-21-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-21-400-801

3. **Landing Gear Forward Quadrant Housing Assembly Installation**
(Figure 401)

A. **References**

Reference	Title
32-31-00-820-801	Landing Gear Control System Adjustment (P/B 501)

B. **Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

C. **Access Panels**

Number	Name/Location
112A	Forward Access Door

D. **Forward Quadrant Housing Assembly Installation**

SUBTASK 32-31-21-420-001

(1) Put the housing assembly [1] in position for installation.

SUBTASK 32-31-21-420-002

(2) Loosen the nuts [5], washers [7], and bolts [4] to permit installation of the brackets [3], that are part of the housing assembly [1], to the structure.

SUBTASK 32-31-21-420-003

(3) Install the bolts [4, 8], washers [6], and nuts [5] which attach the housing assembly [1] to the structure.

SUBTASK 32-31-21-860-002

(4) Make sure the Landing Gear Control Lever is in the OFF position.

SUBTASK 32-31-21-420-004

(5) Align the teleflex cable assembly with the housing assembly [1].

SUBTASK 32-31-21-480-003

(6) Insert the rig pin F70207-7, from kit, F70207-109, through the gearbox and forward quadrant.

SUBTASK 32-31-21-420-005

(7) Install the bolts [9] and washers [6] to attach the teleflex cable assembly to the housing assembly [1].

SUBTASK 32-31-21-420-006

(8) Install the pins [2] to attach cables LGVA and LGVB to the quadrant in the housing assembly [1].

SUBTASK 32-31-21-820-001

(9) Adjust the control system for the landing gear. To do this, do this task: Landing Gear Control System Adjustment, TASK 32-31-00-820-801.

SUBTASK 32-31-21-410-001

(10) Make sure this access panel is closed:

Number	Name/Location
112A	Forward Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PUSH/PULL CABLE AND GEARBOX - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the push/pull cable and the gearbox.

(2) An installation of the push/pull cable and the gearbox.

NOTE: Both the push/pull cable and the gearbox must be replaced together. You can not replace only one of the components.

TASK 32-31-22-020-802

2. Push/Pull Cable and Gearbox Removal

(Figure 401)

A. General

(1) In this procedure you will disconnect the cable from the gearbox, remove the gearbox from the forward quadrant housing installation, disconnect the cable from the control lever, then remove the cable from the airplane.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-31-11-020-801	Landing Gear Control Lever Module Removal (P/B 401)

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Prepare for the Removal

SUBTASK 32-31-22-480-002

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) For the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-22-580-002

(2) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-31-22-860-003

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Push/Pull Cable and Gearbox Removal

SUBTASK 32-31-22-020-002

(1) Disconnect the coupling nut [15] from the gearbox [1] and slide back the outer casing of the push/pull cable [2] to expose the inner cable.

(a) Disconnect the inner cable from the rack inside the gearbox.

NOTE: The inner cable end fits onto the end of the rack. There are no connecting clips.

SUBTASK 32-31-22-020-003

(2) Remove the four bolts [13] and the washers [14] that attach the gearbox [1] to the forward quadrant.

(a) Remove the gearbox [1] from the airplane.

SUBTASK 32-31-22-020-004

(3) Do this task: Landing Gear Control Lever Module Removal, TASK 32-31-11-020-801.

SUBTASK 32-31-22-020-005

(4) To remove the push/pull cable [2] from the airplane, remove the three brackets that connect the cable to the airplane structure:

(a) Remove the two bolts [4] and the washers [5] from bracket [3].

(b) Remove the one bolt [7] and the washer [8] from bracket [6].

(c) Remove the two bolts [10] and the washers [11] from bracket [9].

(d) Remove the push/pull cable [2] from the airplane.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Push/Pull Cable and Gearbox Installation
Figure 401/32-31-22-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Push/Pull Cable and Gearbox Installation
Figure 401/32-31-22-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-22-400-801

3. Push/Pull Cable and Gearbox Installation

(Figure 401)

A. General

(1) In this procedure you will route the cable through the airplane structure, attach the cable to the control lever, attach the cable to the airplane structure with the brackets, connect the cable to the gearbox, and install the gearbox on the forward quadrant housing.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-31-00-730-802	System Test - Landing Gear Control System (P/B 501)
32-31-11-400-801	Landing Gear Control Lever Module Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

E. Prepare for the Installation

SUBTASK 32-31-22-480-003

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) For the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-22-580-003

(2) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-31-22-860-004

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Push/Pull Cable and Gearbox Installation

SUBTASK 32-31-22-020-007

(1) If the push/pull cable [2] is not disconnected from the gearbox [1], disconnect the coupling nut [15] from the gearbox and slide the outer casing of the cable back to expose the inner cable.

(a) Disconnect the inner cable from the rack inside the gearbox.

NOTE: The inner cable end fits onto the end of the rack. There are no connecting clips.

SUBTASK 32-31-22-420-003

(2) Route the push/pull cable [2] down from the flight deck to the forward quadrant and align the cable to the airplane structure.

(a) Connect the bracket [3], bracket [6] and bracket [9] at the indicated stripes on the push/pull cable [2], do not attach the brackets to the airplane structure.

SUBTASK 32-31-22-420-004

(3) Do this task: Landing Gear Control Lever Module Installation, TASK 32-31-11-400-801.

SUBTASK 32-31-22-420-005

(4) Connect the push/pull cable [2] to the airplane structure with the bracket [3], bracket [6] and bracket [9]:

(a) Connect the bracket [3] with the two bolts [4] and the washers [5].

(b) Connect the bracket [6] with the one bolt [7] and the washer [8].

(c) Connect the bracket [9] with the two bolts [10] and the washers [11].

SUBTASK 32-31-22-420-006

(5) Connect the push/pull cable [2] to the gearbox [1]:

(a) Connect the inner cable from the cable assembly to the rack inside the gearbox.

NOTE: The inner cable end fits onto the end of the rack. The are no connecting clips.

(b) Slide the outer casing of the cable assembly down to the gearbox and connect the coupling nut [15] to the gearbox.

(c) Tighten the coupling nut [15] to 125 in-lb (14 N·m) – 150 in-lb (17 N·m).

NOTE: Hold the adapter nut to stop it from moving when you tighten the coupling nut.

(d) Install lockwire on the coupling nut [15] and the adapter nut.

SUBTASK 32-31-22-420-007

(6) Install the gearbox [1] on the forward quadrant.

(a) Move the landing gear control lever to the OFF position.

(b) Align the gearbox [1] with the forward quadrant.

(c) Insert the rig pin F70207-7, from rigging pin kit, SPL-1585, through the gearbox and forward quadrant.

1) Make sure that pin fits without binding.

(d) Install the four washers [14] and the bolts [13] to attach the gearbox [1] to the forward quadrant.

(e) Remove the rig pin.

SUBTASK 32-31-22-420-008

(7) Move the landing gear lever five times to check for smooth operation with no binding.

NOTE: You must use the override button to move the lever.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-31-22-710-001

(8) Do this task: System Test - Landing Gear Control System, TASK 32-31-00-730-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PUSH/PULL CABLE AND GEARBOX - ADJUSTMENT/TEST

1. General

A. This procedure has one task:

(1) An adjustment of the push/pull cable [2] and the gearbox [1] assembly for the landing gear.

NOTE: This assembly does not require normal adjustment and does not need to be adjusted when the Main Gear Extension and Retraction Adjustment/Test procedure is done. Only adjust the push/pull (Teleflex) assembly if the adjustment marks are out of alignment when the distance from the mounting plate to the center of the rod end bearing is 6.7 +/- 0.005 in (170.18 +/- 0.127 mm), or if it is believed that the adjustment may have been disturbed.

TASK 32-31-22-020-801

2. Push/Pull Cable and Gearbox Adjustment

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-31-00-820-801	Landing Gear Control System Adjustment (P/B 501)
32-31-11-020-801	Landing Gear Control Lever Module Removal (P/B 401)
32-31-11-400-801	Landing Gear Control Lever Module Installation (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Adjustment

SUBTASK 32-31-22-480-001

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) For the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-22-580-001

(2) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-31-22-860-001

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Push/Pull Cable and Gearbox Adjustment

SUBTASK 32-31-22-860-002

(1) Disconnect the cable [2] from the control lever module, do this task: (Landing Gear Control Lever Module Removal, TASK 32-31-11-020-801).

(2) Move the cable at the landing gear lever end to align the marks on the gearbox cover and hub.

(3) Check that the distance from the mounting plate to the center of the rod end bearing of the cable assembly at the landing gear lever end measures 6.700 ±0.005 in. (170.180 ±0.127 mm).

(4) If the cable does not measure6.700 ±0.005 in. (170.180 ±0.127 mm) when the marks on the gearbox are aligned, then do the following steps:

(a) Remove the lock wire from the jam nut [3], the adapter nut [4] and the coupling nut.

NOTE: Do not loosen the coupling nut.

(b) Loosen the jam nut [3].

(c) Align the marks on the gearbox.

NOTE: The outer mark is on the cover of the gearbox and is stationary. The inner mark is on the gear and will move.

(d) Turn the adapter nut [4] until the distance from the mounting plate to the center of the rod end bearing of the cable assembly measures 6.700 ±0.005 in. (170.180 ±0.127 mm).

NOTE: When adjusting the adapter nut [4], make sure that the drain hole on the sleeve of the casing assembly is located towards the bottom of the gearbox.

(e) Tighten the jam nut [3] to 220 ±20 in-lb (25 ±2 N·m) while making sure the adapter nut [4] does not move.

(f) Lockwire the jam nut [3] to the gearbox [1], the adapter nut [4] to the jam nut [3], and the coupling nut to the adapter nut [4].

(5) Connect the cable [2] to the control lever module and install the module into the airplane (Landing Gear Control Lever Module Installation, TASK 32-31-11-400-801).

SUBTASK 32-31-22-700-001

(6) Cycle the landing gear lever five times to check for smooth operation with no binding. You must use the override button to cycle the lever.

SUBTASK 32-31-22-700-002

(7) If the operation of the landing gear lever is not smooth after adjusting the push/pull cable and gearbox assembly, do this task: Landing Gear Control System Adjustment, TASK 32-31-00-820-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Push/Pull Cable and Gearbox Adjustment
Figure 501/32-31-22-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Push/Pull Cable and Gearbox Adjustment
Figure 501/32-31-22-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PUSH/PULL CABLE - INSPECTION/CHECK

1. **General**
   A. This procedure contains scheduled maintenance task data.
   B. This procedure has the data for the detailed visual inspection of the push/pull cable.

TASK 32-31-22-211-801

2. **Push Pull Cable Inspection**
   (Figure 601)

   NOTE: This procedure is a scheduled maintenance task.

   A. References

Reference	Title
31-62-11-000-801	Display Unit Removal (P/B 401)
31-62-11-400-801	Display Unit Installation (P/B 401)

   B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

   C. Push/Pull Cable Inspection in the Flight Deck

SUBTASK 32-31-22-010-005

(1) Remove the display unit to the right of the landing gear control lever, do this task: Display Unit Removal, TASK 31-62-11-000-801.

SUBTASK 32-31-22-200-001

(2) Do a check of the crank assembly between the landing gear lever and push/pull cable.
   (a) Examine the crank assembly for loose ends and wear.
   (b) Examine the crank assembly for damage and security of attachments.
   (c) Make sure that the crank assembly is correctly attached to the push/pull cable.

SUBTASK 32-31-22-200-005

(3) Examine the link between the landing gear control lever module and push/pull cable for corrosion, damage or missing pins and cross bolts.

SUBTASK 32-31-22-840-001

(4) Install the display unit to the right of the landing gear control lever, do this task: Display Unit Installation, TASK 31-62-11-400-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Push/Pull Cable Inspection
Figure 601/32-31-22-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-22-211-802

3. **Push/Pull Cable Inspection - Forward Quadrant**
(Figure 602)

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

B. Access Panels

Number	Name/Location
112A	Forward Access Door

C. Push/Pull Cable Inspection in the Forward Quadrant

SUBTASK 32-31-22-010-007

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

NOTE: You can find the lower end of the push/pull cable (teleflex cable) in the forward quadrant on the aft side of the forward pressure bulkhead in the forward equipment compartment.

SUBTASK 32-31-22-211-001

(2) Do a detailed visual inspection of the push/pull cable and push/pull gearbox.

(a) Look at the visible part of the push/pull gearbox to make sure that there is no damage.

(b) Look at the push/pull cable for damage and security of attachments.

D. Put the Airplane Back to Its Usual Condition

SUBTASK 32-31-22-840-003

(1) Close this access panel:

Number	Name/Location
112A	Forward Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Push/Pull Cable Inspection In Forward Quadrant
Figure 602/32-31-22-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR CONTROL LEVER LOCK SOLENOID - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the lock solenoid for the landing gear control lever (referred to as the solenoid [3])

(2) An installation of the lock solenoid for the landing gear control lever.

TASK 32-31-31-020-801

2. Landing Gear Control Lever Lock Solenoid Removal

(Figure 401)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-31-11-020-801	Landing Gear Control Lever Module Removal (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Removal

SUBTASK 32-31-31-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-31-860-001

(2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

SUBTASK 32-31-31-860-002

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-31-010-001

(4) Remove the landing gear control module from the panel structure to get access to the solenoid [3]. To do this, do this task: Landing Gear Control Lever Module Removal, TASK 32-31-11-020-801.

D. Solenoid Removal

SUBTASK 32-31-31-020-001

(1) Disconnect the electrical leads for the solenoid [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-31-31-020-002

(2) Remove the cotter pin [1], washer [2], and pin [4] to disconnect the solenoid [3] from the control lever assembly.

SUBTASK 32-31-31-020-003

(3) Remove the nuts [7], washers [6], and screws [5] which attach the solenoid [3] to the control lever module.

SUBTASK 32-31-31-020-004

(4) Remove the solenoid [3] from the control lever module assembly.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

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Landing Gear Control Lever Lock Solenoid Installation
Figure 401/32-31-31-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Control Lever Lock Solenoid Installation
Figure 401/32-31-31-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-31-400-801

3. Landing Gear Control Lever Lock Solenoid Installation

(Figure 401)

A. References

Reference	Title
32-31-11-400-801	Landing Gear Control Lever Module Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Lock Solenoid Installation

SUBTASK 32-31-31-420-001

(1) Put the solenoid [3] in its position in the control lever module and install the screws [5], washers [6], and nuts [7].

SUBTASK 32-31-31-640-001

(2) Apply a thin layer of, grease, D00633 or, grease, D00013 to the outside diameter of the pin [4].

SUBTASK 32-31-31-420-002

(3) Install the pin [4], washer [2], and new cotter pin [1] which attach the solenoid [3] to the control lever module.

SUBTASK 32-31-31-420-003

(4) Connect the electrical leads to the solenoid [3].

SUBTASK 32-31-31-410-001

(5) Move the control lever module into position in the panel structure.

SUBTASK 32-31-31-410-002

(6) Install the landing gear control lever module. To do this, do this task: Landing Gear Control Lever Module Installation, TASK 32-31-11-400-801.

SUBTASK 32-31-31-860-003

(7) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR CONTROL CABLES - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the control cables for the landing gear

(2) An installation of the control cables for the landing gear.

TASK 32-31-41-020-801

2. Landing Gear Control Cable Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
25-22-00-000-801	Passenger Seat - Removal (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
121	Forward Cargo Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Removal

SUBTASK 32-31-41-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) For the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-41-580-001

(2) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-31-41-860-001

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-41-010-001

(4) Remove the passenger seats, do this task: Passenger Seat - Removal, TASK 25-22-00-000-801.

SUBTASK 32-31-41-010-002

(5) Remove the left inboard floor panel which is between stations 663 and 685.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Landing Gear Control Cable Removal

SUBTASK 32-31-41-020-001

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

NOTE: You can find the turnbuckles [1] in the area in front of the nose wheel well behind the, forward access door panel.

(2) Remove the clips and disconnect the turnbuckles [1] for the LGVA cable assembly [2] and cable assembly [7], and LGVB cable assembly [3] and cable assembly [6].

SUBTASK 32-31-41-020-002

(3) Remove the pins [4] that attach cable assembly [2] and cable assembly [3] to the forward quadrant.

SUBTASK 32-31-41-020-003

(4) Remove the pins [5] that attach cable assembly [7] (cable A) and cable assembly [6] (cable B) to the control quadrant above the main landing gear wheel well upper bulkhead.

SUBTASK 32-31-41-480-002

(5) Attach cords to the ends of the cable assembly [7] (cable A) and cable assembly [6] (cable B) that you disconnected from the control quadrant.

NOTE: This will help to install new cables.

SUBTASK 32-31-41-020-004

(6) From the turnbuckle locations, pull the cable assembly [7] (cable A) and cable assembly [6] (cable B) off the pulleys and floor beams.

NOTE: Do not pull the cords out fully.

SUBTASK 32-31-41-020-005

(7) Pull the cable assembly [2] (cables C) and cable assembly [3] (cable D) off the pulleys and the forward quadrant.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G45297 S0006575125_V2

Landing Gear Control Cable Installation
Figure 401/32-31-41-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F95822 S0006575130_V2

Landing Gear Control Cable Installation
Figure 401/32-31-41-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLES A, B, C AND D

CABLE NAME	FUNCTION VA-UP VB-DN	LENGTH L*	TERMINAL A	TERMINAL B
A	LGVA	677.2	MS21260-L4LH	BACT14A4
B	LGVB	687.7	MS21260-L4RH	BACT14A4
C	LGVA	32.2	MS21260-L4RH	BACT14A4
D	LGVB	26.1	MS21260-L4LH	BACT14A4

* LENGTHS ARE IN INCHES

TABLE A

1 CABLE CONSTRUCTION IS CARBON STEEL:
BMS 7-265, TYPE 1, COMPOSITION A (TIN OVER ZINC), 7 X 19.

G45298 S0006575133_V4

Landing Gear Control Cable Installation
Figure 401/32-31-41-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-41-400-801

3. Landing Gear Control Cable Installation

(Figure 401)

A. References

Reference	Title
20-10-91-400-801	Control Cables Installation (P/B 401)
20-20-31-200-801	Control Cable Wire Rope - Inspection (P/B 601)
25-22-00-400-802	Passenger Seat - Installation (P/B 401)
32-31-00-820-801	Landing Gear Control System Adjustment (P/B 501)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Cable assembly	32-31-21-01-015	LOM ALL
3	Cable assembly	32-31-21-01-010	LOM ALL
4	Pin	32-31-21-01-005	LOM ALL
5	Pin	32-31-41-01-055	LOM ALL
6	Cable assembly	32-31-41-01-060	LOM ALL
7	Cable assembly	32-31-41-01-065	LOM ALL

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
121	Forward Cargo Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Landing Gear Control Cable Installation

SUBTASK 32-31-41-420-001

(1) Install the new cable assembly [7] (cable A) and cable assembly [6] (cable B) through the floor beams and on the pulleys (TASK 20-10-91-400-801).

SUBTASK 32-31-41-080-001

(2) Remove the cords from the ends of the cable assembly [7] (cable A) and cable assembly [6] (cable B) that you will attach to the control quadrant.

SUBTASK 32-31-41-420-002

(3) Install the pins [5] for the cable assembly [7] (cable A) and cable assembly [6] (cable B) at the control quadrant above the main landing gear wheel well upper bulkhead.

SUBTASK 32-31-41-420-003

(4) Install the new cable assembly [2] (cable C) and cable assembly [3] (cable D) through the pulleys to the forward quadrant (TASK 20-10-91-400-801).

SUBTASK 32-31-41-420-004

(5) Install the pins [4] for the cable assembly [2] (cable C) and cable assembly [3] (cable D) at the forward quadrant.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-31-41-420-005

(6) Connect the LGVA cable assembly [2] and cable assembly [7], and LGVB cable assembly [3], cable assembly [6] at the turnbuckles [1].

SUBTASK 32-31-41-820-001

(7) Adjust the control system for the landing gear (TASK 32-31-00-820-801).

SUBTASK 32-31-41-200-001

(8) Do this task: Control Cable Wire Rope - Inspection, TASK 20-20-31-200-801.

SUBTASK 32-31-41-410-003

(9) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-31-41-410-001

(10) Install the left inboard floor panel which is between stations 663 and 685.

SUBTASK 32-31-41-410-002

(11) Install the passenger seats, do this task: Passenger Seat - Installation, TASK 25-22-00-400-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR SELECTOR VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the selector valve for the landing gear (referred to as the valve [8])

(2) An installation of the selector valve for the landing gear.

(3) A visual inspection of the selector valve for the landing gear.

TASK 32-31-51-020-801

2. Landing Gear Selector Valve Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-31-51-480-008

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-51-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-31-51-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Landing Gear Selector Valve Removal

SUBTASK 32-31-51-020-001

(1) Remove the nut [3], washer [4], washer [6], and bolt [5] to disconnect the link assembly at the valve [8].

SUBTASK 32-31-51-480-002

(2) To disconnect the hydraulic lines from the valve [8], do the following steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Disconnect the hydraulic line [12] from the union [1].

(b) Disconnect the tee fitting [22] from the union [19].

(c) Disconnect the cross fitting [20] from the union [17].

(d) Disconnect the tee fitting [21] from the union [1].

(e) If it is necessary, disconnect the hydraulic line [9] and hydraulic line [10] from tee fitting [21].

(f) If it is necessary, disconnect the hydraulic line [11], hydraulic line [15], hydraulic line [16], from cross fitting [20].

(g) If it is necessary, disconnect the hydraulic line [13] and hydraulic line [14] from the tee fitting [22].

SUBTASK 32-31-51-480-003

(3) Install caps on the hydraulic lines and ports on the valve [8].

SUBTASK 32-31-51-480-004

(4) Disconnect the electrical connector from the valve [8].

SUBTASK 32-31-51-020-002

(5) Remove the nuts [3], washers [4], washers [6], and bolts [7] which attach the valve [8] to the structure.

SUBTASK 32-31-51-020-003

(6) Remove the valve [8] from the airplane.

SUBTASK 32-31-51-080-001

(7) Remove the caps from the ports on the valve [8] and drain the hydraulic fluid.

SUBTASK 32-31-51-020-004

(8) Do these steps if the replacement valve [8] does not have the unions installed:

(a) Remove the unions [1], union [17], and union [19] from the valve [8].

(b) Remove and discard the packings [2] and packing [18].

(c) Install plugs in the ports on the valve [8].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

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Landing Gear Selector Valve Installation
Figure 401/32-31-51-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Landing Gear Selector Valve Installation
Figure 401/32-31-51-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-51-400-801

3. **Landing Gear Selector Valve Installation**

(Figure 401)

A. **References**

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-31-00-730-802	System Test - Landing Gear Control System (P/B 501)
32-31-00-820-801	Landing Gear Control System Adjustment (P/B 501)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES
SWPM 20-60-03	Special Protection of Electrical Connectors

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

C. **Consumable Materials**

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

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D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Packing	32-31-51-01-040	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-31-51-02-120	LOM 422-434, 437-447, 450-999
18	Packing	32-31-51-01-050	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-31-51-02-130	LOM 422-434, 437-447, 450-999

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

F. Landing Gear Selector Valve Installation

SUBTASK 32-31-51-420-001

(1) Do these steps if the replacement valve [8] does not have the unions [1] and union [17] installed:

(a) Lubricate these items with hydraulic fluid, D00153:

1) The packings [2] and packing [18].

2) The unions [1], union [17], and union [19].

(b) Remove the plugs from the ports on the valve [8].

(c) Install the packings [2], packing [18], unions [1], union [17], and union [19] in the valve [8].

(d) Tighten the unions [1] to 340 in-lb (38.4 N·m) - 380 in-lb (42.9 N·m).

(e) Tighten the union [17] and union [19] to 265 in-lb (29.9 N·m) - 295 in-lb (33.3 N·m).

SUBTASK 32-31-51-610-001

(2) Fill the valve [8] with hydraulic fluid, D00153.

(a) Put a cap on the unions [1], union [17], and union [19].

SUBTASK 32-31-51-100-001

(3) Clean the surface of the bracket where the valve [8] will attach, do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

SUBTASK 32-31-51-100-002

(4) Clean the surface of the valve [8] that will attach to the bracket, do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

SUBTASK 32-31-51-110-001

(5) Apply coating, C00064, to all of the areas that you cleaned on the bracket and the valve [8].

SUBTASK 32-31-51-420-002

(6) Put the valve [8] in its position on the bracket.

SUBTASK 32-31-51-420-003

(7) Install the bolts [7], washers [4], washers [6], and nuts [3].

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SUBTASK 32-31-51-760-001

(8) Measure the electric bonding resistance between the valve [8] and the bracket (SWPM 20-20-00):

(a) Use an intrinsically safe approved bonding meter, COM-1550.

(b) Make sure that the resistance is 0.0025 ohms (2.5 milliohm) or less.

1) If the measured resistance is not less than 0.0025 ohms, do the steps to clean the mating surfaces of the bracket and valve [8] and apply the coating, C00064, again.

SUBTASK 32-31-51-110-002

(9) If it is necessary, repair damaged finish on the valve [8] with a manual application of coating, C00064.

SUBTASK 32-31-51-390-001

(10) Apply a fillet seal of sealant, A02315, to the joints between the valve [8] and bracket, the heads and exposed threads of the bolts [7], and the nuts [3].

SUBTASK 32-31-51-600-001

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(11) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the hole on the clevis of the valve [8] where you will attach the link assembly.

SUBTASK 32-31-51-420-004

(12) Install the bolt [5], washers [4], washers [6], and nut [3] to connect the link assembly to the valve [8].

SUBTASK 32-31-51-080-002

(13) Remove the caps from the unions [1], union [17], and union [19].

SUBTASK 32-31-51-420-011

(14) If the hydraulic lines was removed from the cross fitting [20], tee fitting [21], and tee fitting [22], do the following steps:

(a) Connect the hydraulic line [9] and hydraulic line [10] to the tee fitting [21].

(b) Connect the hydraulic line [11], hydraulic line [15], and hydraulic line [16] to the cross fitting [20].

(c) Connect the hydraulic line [13] and hydraulic line [14] to the tee fitting [22].

(d) Tighten the B-nut of hydraulic line [10] to 500 ±25 in-lb (56.5 ±2.8 N·m).

(e) Tighten the B-nut of hydraulic line [9] to 700 ±35 in-lb (79.1 ±4.0 N·m)

(f) Tighten the B-nuts of hydraulic line [11], hydraulic line [15], and hydraulic line [16] to 270 ±14 in-lb (30.5 ±1.6 N·m).

(g) Tighten the B-nut of hydraulic line [13] to 280 ±14 in-lb (31.6 ±1.6 N·m).

(h) Tighten the B-nut of hydraulic line [14] to 140 ±7 in-lb (15.8 ±0.8 N·m).

SUBTASK 32-31-51-420-010

(15) Connect the hydraulic line [12], cross fitting [20], tee fitting [21], and tee fitting [22] to valve [8].

SUBTASK 32-31-51-420-005

(16) Tighten the B-nut of hydraulic line [12] to 700 ±35 in-lb (79.1 ±4.0 N·m).

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SUBTASK 32-31-51-420-007

(17) Tighten the cross fitting [20] to 500 ±25 in-lb (56.5 ±2.8 N·m).

SUBTASK 32-31-51-420-008

(18) Tighten the tee fitting [21] to 700 ±35 in-lb (79.1 ±4.0 N·m).

SUBTASK 32-31-51-420-009

(19) Tighten the tee fitting [22] to 500 ±25 in-lb (56.5 ±2.8 N·m).

SUBTASK 32-31-51-420-006

(20) Before you connect the electrical connector to the valve [8], examine the connector for corrosion.

WARNING	DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, repair the corrosion parts (SWPM 20-60-03).

(b) Apply D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

SUBTASK 32-31-51-480-009

(21) Connect the electrical connector to the valve [8].

SUBTASK 32-31-51-700-001

(22) Do the test of the control system for the landing gear: System Test - Landing Gear Control System, TASK 32-31-00-730-802.

SUBTASK 32-31-51-860-002

(23) Move the control lever for the landing gear to the OFF position.

SUBTASK 32-31-51-480-005

(24) Install the rig pin through the link and the structure.

(a) Make sure that the rig pin has a free fit.

1) If the rig pin does not have a free fit, do the adjustment of the landing gear control system: Landing Gear Control System Adjustment, TASK 32-31-00-820-801.

SUBTASK 32-31-51-710-001

(25) Do a test of the main landing gear only: Main Landing Gear Operational Test, TASK 32-32-00-710-801.

NOTE: If you cannot lift the airplane for the test, do the alternate landing gear test.

G. Alternate Landing Gear Test

NOTE: If you cannot lift the airplane to do a test of the main landing gear do this alternate test.

SUBTASK 32-31-51-700-002

(1) Make sure that these parts are correctly installed:

(a) valve [8]

(b) Link assy

(c) Hydraulic lines.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-31-51-480-010

WARNING	MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-51-860-003

(3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-31-51-700-003

(4) Move the control lever for the landing gear from the DN to the UP position and back three times.

NOTE: You must use the override trigger to do this.

NOTE: Hold the lever in each position for three seconds before you move the lever to the subsequent position.

SUBTASK 32-31-51-860-004

(5) Move the control lever for the landing gear from the DN to the UP position.

(a) Make sure that the rod end of the actuator for the main landing gear tries to extend when the control lever is moved from the DN to the UP position.

SUBTASK 32-31-51-860-005

(6) Move the control lever for the landing gear to the DN position.

(a) Make sure that the rod end of the actuator for the main landing gear tries to retract when the control lever is moved to the DN position.

SUBTASK 32-31-51-210-001

(7) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-31-51-860-006

(8) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR SELECTOR VALVE - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This task has the data for a detailed visual inspection of the landing gear selector valve link assembly and quadrant crank.

TASK 32-31-51-200-801

2. Landing Gear Selector Valve Inspection

(Figure 601)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Procedure

SUBTASK 32-31-51-480-007

> **WARNING**
> MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-51-860-007

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-51-200-001

(3) Do a detailed visual examination of the landing gear selector valve and quadrant:

(a) Look at the visible part of the valve piston to make sure there are no leaks or damage.

(b) Look at the link assembly to make sure it is attached correctly to the valve and the crank.

(c) Look at the quadrant crank and attaching bolt to make sure it is attached correctly to the shaft and the link assembly.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Selector Valve Inspection
Figure 601/32-31-51-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR SELECTOR VALVE QUADRANT - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the quadrant for the landing gear selector valve (called the quadrant assembly [11])

(2) An installation of the quadrant for the landing gear selector valve.

TASK 32-31-61-020-801

2. Landing Gear Selector Valve Quadrant Removal

(Figure 401)

A. References

Reference	Title
25-22-00-000-801	Passenger Seat - Removal (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
121	Forward Cargo Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Removal

SUBTASK 32-31-61-480-005

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-61-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-61-010-001

(3) In the area above the landing gear selector valve, remove the passenger seats, do this task: Passenger Seat - Removal, TASK 25-22-00-000-801.

NOTE: The landing gear selector valve is in the main gear wheel well.

SUBTASK 32-31-61-010-002

(4) Remove the left inboard floor panel that is above the landing gear selector valve.

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E. Landing Gear Selector Valve Quadrant Removal

SUBTASK 32-31-61-020-001

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

NOTE: You can find the turnbuckles in the area in front of the nose wheel well behind the forward access door.

(2) Remove the turnbuckle clips [1] and disconnect the turnbuckles for the cables.

SUBTASK 32-31-61-020-002

(3) Remove the pins [10] that attach cables LGVA and LGVB to the control quadrant above the main landing gear wheel well upper bulkhead.

SUBTASK 32-31-61-020-003

(4) Remove the cables LGVA and LGVB from the quadrant assembly [11].

SUBTASK 32-31-61-020-004

(5) Remove the nut [8], washer [9], washer [3], and bolt [2] to disconnect the link assembly [16] with the bellcrank [4] from the landing gear selector valve.

SUBTASK 32-31-61-020-005

(6) Remove the pin [6], nut [7], and washer [5] from the shaft of the quadrant assembly [11].

SUBTASK 32-31-61-020-006

(7) Remove the link assembly [16] with the bellcrank [4] from the shaft of the quadrant assembly [11].

SUBTASK 32-31-61-020-007

(8) Remove the nuts [13], washers [14], bolts [12], and washers [15] that hold the quadrant assembly [11] to the structure.

SUBTASK 32-31-61-020-008

(9) Remove the quadrant assembly [11] from the airplane.

——— END OF TASK ———

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Landing Gear Selector Valve Quadrant Installation
Figure 401/32-31-61-990-801 (Sheet 1 of 4)

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Landing Gear Selector Valve Quadrant Installation
Figure 401/32-31-61-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Selector Valve Quadrant Installation
Figure 401/32-31-61-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Selector Valve Quadrant Installation
Figure 401/32-31-61-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-61-400-801

3. Landing Gear Selector Valve Quadrant Installation

(Figure 401)

A. References

Reference	Title
25-22-00-400-802	Passenger Seat - Installation (P/B 401)
32-31-00-730-802	System Test - Landing Gear Control System (P/B 501)
32-31-00-820-801	Landing Gear Control System Adjustment (P/B 501)
51-31-00-390-804	Fillet Seal Application (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
6	Pin	32-31-61-01-010	LOM ALL
10	Pin	32-31-41-01-055	LOM ALL
11	Quadrant assembly	32-31-61-01-130	LOM 404, 411, 416, 420, 422-434, 437-447, 450-999
		32-31-61-01-146	LOM ALL

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
121	Forward Cargo Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Landing Gear Selector Valve Quadrant Installation

SUBTASK 32-31-61-420-001

(1) Put the quadrant assembly [11] in its position on top of the wheel well ceiling.

SUBTASK 32-31-61-100-001

(2) Install the bolts [12], washers [15], washers [14], and nuts [13].

SUBTASK 32-31-61-100-002

(3) Apply a fillet seal around the bottom of the support housing for the quadrant assembly [11], do this task: Fillet Seal Application, TASK 51-31-00-390-804.

SUBTASK 32-31-61-110-001

(4) Install the bellcrank [4] with the link assembly [16] on the shaft of the quadrant assembly [11].

SUBTASK 32-31-61-420-004

(5) Install the washer [5] and nut [7].

SUBTASK 32-31-61-420-008

(6) Tighten the nut [7] to 300 in-lb (33.9 N·m) - 600 in-lb (67.8 N·m).

SUBTASK 32-31-61-420-009

(7) Install a new pin [6].

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SUBTASK 32-31-61-420-005

(8) Install the bolt [2], washer [3], washer [9], and nut [8] to connect the link assembly [16] with the bellcrank [4] to the landing gear selector valve.

SUBTASK 32-31-61-420-006

(9) Attach the cables LGVA and LGVB to the quadrant assembly [11] and install the pins [10].

SUBTASK 32-31-61-420-007

(10) Tighten the cables LGVA and LGVB.

SUBTASK 32-31-61-820-001

(11) Adjust and do a test of the control system for the landing gear, do these tasks: Landing Gear Control System Adjustment, TASK 32-31-00-820-801 and System Test - Landing Gear Control System, TASK 32-31-00-730-802.

SUBTASK 32-31-61-940-001

(12) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-31-61-410-001

(13) Install the left inboard floor panel that you removed.

SUBTASK 32-31-61-410-002

(14) Install the passenger seats, do this task: Passenger Seat - Installation, TASK 25-22-00-400-802.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR SELECTOR VALVE QUADRANT - INSPECTION/CHECK

1. General

A. This task has the data for a dimensional inspection of the quadrant for the landing gear selector valve. No procedure is given in this section to get access to permit the inspection. The quadrant must be removed to do the inspection. To do this,

These are the tasks:

Landing Gear Selector Valve Quadrant Removal, TASK 32-31-61-020-801,

LOM 402, 406, 407, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 416, 420 POST SB 737-32-1422

Landing Gear Selector Valve Quadrant Installation, TASK 32-31-61-400-801.

LOM ALL

TASK 32-31-61-200-801

2. Landing Gear Selector Valve Quadrant Inspection

(Figure 601)

A. General

(1) This procedure gives wear limits and repair data for the landing gear selector valve quadrant.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-31-61-020-801	Landing Gear Selector Valve Quadrant Removal (P/B 401)
32-31-61-400-801	Landing Gear Selector Valve Quadrant Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1096	Micrometer - Depth, 0-1 inch, Readable to 1/1000 inch
STD-1097	Caliper - Vernier, 0-6 inch, Readable to 1/1000 inch

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
121	Forward Cargo Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left

E. Procedure

SUBTASK 32-31-61-480-002

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

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SUBTASK 32-31-61-020-009

(2) Remove parts to get access to the quadrant assembly for the landing gear selector valve (Figure 601), do this task: Landing Gear Selector Valve Quadrant Removal, TASK 32-31-61-020-801.

SUBTASK 32-31-61-020-010

(3) Use these tools to check for wear on the parts of the landing gear selector valve quadrant:

(a) micrometer (0-1 inch, readable to 1/1000 inch), STD-1096

(b) vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097

SUBTASK 32-31-61-020-011

(4) Examine the parts of the quadrant assembly for worn areas:

(a) Remove the parts that need a check.

(b) Measure the parts as necessary with a micrometer (0-1 inch, readable to 1/1000 inch), STD-1096 or a vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

(c) Compare the dimensions you measured with the permitted wear dimensions in the table below (Table 601).

(d) If the parts are not in the tolerance, replace or repair the part as necessary.

Table 601/32-31-61-993-803

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#1 CRANK	I.D.	0.250 in 6.350 mm	0.254 in 6.452 mm	0.261 in 6.629 mm	0.0115 in 0.2921 mm
#1 BOLT	O.D.	0.2485 in 6.3119 mm	0.2495 in 6.3373 mm	0.2475 in 6.2865 mm	
#2 VALVE	I.D.	0.250 in 6.350 mm	0.254 in 6.452 mm	0.261 in 6.629 mm	0.0115 in 0.2921 mm
#2 BOLT	O.D.	0.2485 in 6.3119 mm	0.2495 in 6.3373 mm	0.2475 in 6.2865 mm	
#3 BEARING	I.D.	0.9995 in 25.387 mm	1.0000 in 25.400 mm	1.0005 in 25.413 mm	0.0005 in 0.0127 mm
#3 SHAFT	O.D.	1.0001 in 25.402 mm	1.0004 in 25.410 mm	0.9999 in 25.397 mm	
#4 SUPPORT	I.D.	1.9997 in 50.792 mm	2.0003 in 50.808 mm	2.0010 in 50.825 mm	0.002 in

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 601/32-31-61-993-803 (Continued)

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#4 BEARING	O.D.	1.9995 in 50.787 mm	2.0000 in 50.800 mm	1.9990 in 50.775 mm	0.051 mm
#5 SUPPORT	I.D.	1.9988 in 50.770 mm	1.9993 in 50.782 mm	2.0000 in 50.800 mm	0.001 in
#5 BEARING	O.D.	1.9995 in 50.787 mm	2.0000 in 50.800 mm	1.9990 in 50.775 mm	0.025 mm
#6 CRANK	I.D.	in mm	in mm	in mm	0.005 in
#6 SHAFT	O.D.	in mm	in mm	in mm	0.0127 mm *[1]
#7 BEARING	I.D.	0.9995 in 25.837 mm	1.0000 in 25.400 mm	1.0015 in 25.438 mm	0.002 in
#7 SHAFT	O.D.	0.9992 in 25.380 mm	0.9997 in 25.392 mm	0.9985 in 25.362 mm	0.051 mm

*[1] Spline backlash measured at the pitch diameter of the spline.

SUBTASK 32-31-61-020-012

(5) Install the parts on the quadrant assembly for the landing gear selector valve. To do this, do this task: Landing Gear Selector Valve Quadrant Installation, TASK 32-31-61-400-801.

END OF TASK

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Landing Gear Selector Valve Quadrant Wear Limits
Figure 601/32-31-61-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A-A

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Landing Gear Selector Valve Quadrant Wear Limits
Figure 601/32-31-61-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-61-200-802

3. Landing Gear Selector Valve Quadrant Clearance Inspection

A. General

(1) This procedure gives instructions to inspect the clearance between the landing gear selector valve quadrant and it's stop.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-31-61-020-801	Landing Gear Selector Valve Quadrant Removal (P/B 401)
32-31-61-400-801	Landing Gear Selector Valve Quadrant Installation (P/B 401)

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
121	Forward Cargo Compartment - Left
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left

D. Procedure

Figure 602

SUBTASK 32-31-61-480-003

WARNING OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-61-480-004

(2) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-31-61-860-002

(3) For hydraulic system A, do this task: (Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-61-860-003

(4) Remove parts to get access to the quadrant assembly for the landing gear selector valve. Do this task: Landing Gear Selector Valve Quadrant Removal, TASK 32-31-61-020-801.

SUBTASK 32-31-61-860-004

(5) Measure the clearance of the aft control quadrant and replace it if necessary, as follows.

(a) Put the control lever for the landing gear in the DN position.

NOTE: Do not pull the lever aft and move the lever to the maximum DN before the lever is put into the DN detent. Release aft force on the lever when it is moved to the DN detent and make sure the lever moves fully forward into the DN detent.

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(b) Measure the clearance between the aft control quadrant and it's stop.

If the clearance is more than 0.062 in. (1.575 mm), it is not necessary to replace the aft control quadrant.

(c) If the clearance is less than or equal to 0.062 in. (1.575 mm), replace the aft control quadrant.

SUBTASK 32-31-61-860-005

(6) Install the parts on the quadrant assembly for the landing gear selector valve. To do this, do this task: Landing Gear Selector Valve Quadrant Installation, TASK 32-31-61-400-801.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Landing Gear Selector Valve Quadrant Clearance Inspection
Figure 602/32-31-61-990-803 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE)

B

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Landing Gear Selector Valve Quadrant Clearance Inspection
Figure 602/32-31-61-990-803 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Selector Valve Quadrant Clearance Inspection
Figure 602/32-31-61-990-803 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Selector Valve Quadrant Clearance Inspection
Figure 602/32-31-61-990-803 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR TRANSFER VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these three tasks:

(1) A removal of the transfer valve for the landing gear

(2) An installation of the transfer valve for the landing gear

(3) An operational test of the transfer valve.

TASK 32-31-71-020-801

2. Landing Gear Transfer Valve Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Removal

SUBTASK 32-31-71-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-71-860-001

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-31-71-860-002

(3) Remove the pressure from hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-31-71-580-001

(4) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

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D. Landing Gear Transfer Valve Removal

SUBTASK 32-31-71-020-001

(1) Disconnect the electrical connector [11] from the valve assembly [1].

SUBTASK 32-31-71-930-001

(2) Put tags on the hydraulic lines to identify the correct locations of the lines.

SUBTASK 32-31-71-020-002

(3) Disconnect the hydraulic lines from the valve assembly [1].

SUBTASK 32-31-71-480-003

(4) Install caps on the hydraulic lines and the ports on the valve assembly [1].

SUBTASK 32-31-71-020-003

(5) Remove the bolt [5], washer [8], jumper assembly [7] and washer [6] from the valve assembly [1].

SUBTASK 32-31-71-020-004

(6) Remove the bolts [13] and washers [12] which attach the valve assembly [1] to the support bracket [9].

SUBTASK 32-31-71-020-005

(7) Remove the valve assembly [1] from the airplane.

SUBTASK 32-31-71-080-001

(8) Remove the caps from the ports on the valve assembly [1] and drain the hydraulic fluid.

SUBTASK 32-31-71-020-006

(9) Do these steps if the replacement valve assembly [1] does not have unions [10] or a reducer [3] installed:

(a) Remove the unions [10] and the reducer [3].

(b) Remove and discard the packings [4].

(c) Install plugs in the ports on the valve assembly [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Transfer Valve Installation
Figure 401/32-31-71-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR TRANSFER VALVE

B

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Main Landing Gear Transfer Valve Installation
Figure 401/32-31-71-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-31-71-400-801

3. Landing Gear Transfer Valve Installation

(Figure 401)

A. References

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-10-37-120-801	Electrical Bonding Inspection (P/B 601)
20-30-11-910-801	Adhesives, Cements, and Sealants (P/B 201)
29-00-00-870-801	Bleed the Hydraulic Systems (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

C. Consumable Materials

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Valve assembly	32-31-71-01-045	LOM ALL
3	Reducer	32-31-71-01-055	LOM ALL
4	Packing	32-31-71-01-060	LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
10	Union	32-31-71-01-050	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

F. General

SUBTASK 32-31-71-710-001

(1) After the installation task for the landing gear transfer valve assembly [1], perform the operational test.

G. Landing Gear Transfer Valve Installation

SUBTASK 32-31-71-420-001

(1) Do these steps if the replacement valve assembly [1] does not have the unions [10] or reducer [3] installed:

(a) Lubricate these items with hydraulic fluid, D00153:

1) The new packings [4]

2) The reducer [3]

3) The unions [10].

(b) Remove the plugs from the ports on the valve assembly [1].

(c) Install the packings [4], reducer [3], and unions [10] in the valve assembly [1].

(d) Torque the reducer [3] and unions [10] to 360 ±18 in-lb (40.7 ±2.0 N·m).

SUBTASK 32-31-71-100-001

(2) Clean the surface of the support bracket [9] where the valve assembly [1] will be attached, do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

SUBTASK 32-31-71-100-002

(3) Clean the surface of the valve assembly [1] that will attach to the bracket, do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

SUBTASK 32-31-71-110-001

(4) Apply coating, C00064, to all of the areas that you cleaned on the support bracket [9] and valve assembly [1].

SUBTASK 32-31-71-600-001

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(5) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the shank and threads of the bolt [5] and bolts [13].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-31-71-420-003

(6) Install the bolts [13] and washers [12], which attach the valve assembly [1] to the support bracket [9].

SUBTASK 32-31-71-100-003

(7) Clean the surface of the valve assembly [1] where the jumper assembly [7] connects, do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

SUBTASK 32-31-71-100-004

(8) Clean the surface of the jumper assembly [7], washer [6], and washer [8] that will attach to the valve assembly [1] (SWPM 20-20-00):

(a) Use Cleaning Procedure 5 to clean the jumper assembly [7], washer [6], and washer [8].

SUBTASK 32-31-71-110-002

(9) Apply coating, C00064, to all of the areas that you cleaned on the jumper assembly [7] and valve assembly [1].

SUBTASK 32-31-71-420-004

(10) Install the washer [6], washer [8], and bolt [5] to attach the jumper assembly [7] to the valve assembly [1].

SUBTASK 32-31-71-760-002

(11) Measure the electrical resistance between the valve assembly [1] and support bracket [9] (TASK 20-10-37-120-801).

(a) Use an intrinsically safe approved bonding meter, COM-1550.

(b) Make sure that the resistance is 0.001 ohms or less.

SUBTASK 32-31-71-420-009

(12) Apply a fillet seal along the edges of the joint between the valve assembly [1] and bracket, do this task: Adhesives, Cements, and Sealants, TASK 20-30-11-910-801.

SUBTASK 32-31-71-390-001

(13) Apply a fillet seal of sealant, A02315, to the bonding jumper terminal connections, do this task: Adhesives, Cements, and Sealants, TASK 20-30-11-910-801.

SUBTASK 32-31-71-080-002

(14) Remove the caps from the unions [10] and reducer [3] on the valve assembly [1].

SUBTASK 32-31-71-420-005

(15) Connect the hydraulic lines [2] to the valve assembly [1].

(a) Torque the B-nut on the system A pressure hydraulic line [14] to 700 in-lb (79 N·m).

(b) Torque the B-nut on the system A return hydraulic line [15] to 700 in-lb (79 N·m).

(c) Torque the B-nut on the landing gear pressure hydraulic line [16] to 700 in-lb (79 N·m).

(d) Torque the B-nut on the landing gear return hydraulic line [17] to 500 in-lb (56 N·m).

(e) Torque the B-nut on the system B pressure hydraulic line [18] to 700 in-lb (79 N·m).

(f) Torque the B-nut on the system B return hydraulic line [19] to 700 in-lb (79 N·m).

SUBTASK 32-31-71-840-001

(16) Remove the tags that you put on the hydraulic lines to identify the correct location.

SUBTASK 32-31-71-420-007

(17) Before you connect the electrical connector [11] to the valve assembly [1], examine the connector for corrosion.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there is corrosion, refer to (SWPM 20-60-03) to correct the problem.

(b) Apply the D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

(c) Connect the electrical connector [11] to the valve assembly [1].

SUBTASK 32-31-71-860-003

(18) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-31-71-870-001

(19) Bleed the hydraulic system, do this task: Bleed the Hydraulic Systems, TASK 29-00-00-870-801.

SUBTASK 32-31-71-860-004

(20) For hydraulic systems A and B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-31-71-210-001

(21) Make sure that there are no leaks at the hydraulic line connections.

SUBTASK 32-31-71-710-002

(22) Do the operational test of the valve assembly [1], do this task: Operational Test of the Transfer Valve, TASK 32-31-71-400-802.

——— **END OF TASK** ———

TASK 32-31-71-400-802

4. Operational Test of the Transfer Valve

(Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This procedure is performed with the airplane on the ground.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-10-740-801	Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test (P/B 501)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Test of the Transfer Valve Solenoids

SUBTASK 32-31-71-480-006

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-31-71-860-017

(2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-31-71-860-018

(3) Make sure the control lever for the landing gear is in the DN position.

SUBTASK 32-31-71-860-019

(4) Pressurize hydraulic system A and B: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-31-71-860-020

(5) Push the ON/OFF switch on the PSEU panel to turn on the PSEU.

SUBTASK 32-31-71-710-010

(6) Push the down arrow until GROUND TESTS? is displayed, then press YES.

SUBTASK 32-31-71-710-011

(7) Push the down arrow until LGTV TEST? is displayed, then press YES.

SUBTASK 32-31-71-710-015

(8) Make sure the transfer valve passes the test.

SUBTASK 32-31-71-710-012

(9) Push the ON/OFF switch on the PSEU panel to turn off the PSEU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Test of Transfer Valve Operation Which Uses Alternate Steering

SUBTASK 32-31-71-480-008

> **WARNING** MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES, CABLES, AND LANDING GEAR AREAS. PRESSURIZATION OF A HYDRAULIC SYSTEM CAN MOVE CONTROL SURFACES, CABLES, AND LANDING GEAR. THIS MOVEMENT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Move the towing lever to the TOW position and Install the lock pin.

SUBTASK 32-31-71-860-021

(2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	15	C01355	LANDING GEAR AIR/GND SYS 2
D	17	C01027	LANDING GEAR NOSE GEAR STEER

SUBTASK 32-31-71-860-022

(3) Make sure the ALT NOSE WHEEL STEERING switch on the P-1 Captain's panel is in the NORM position.

SUBTASK 32-31-71-080-004

(4) Remove the lock pin from the towing lever.

NOTE: Removing the lock pin from the towing lever moves the lever to the NORMAL position.

SUBTASK 32-31-71-860-023

(5) Remove power from Hydraulic System A: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-31-71-860-025

(6) Move the ALT NOSE WHEEL STEERING switch on the P-1 Captain's panel to the ALT position.

SUBTASK 32-31-71-710-013

(7) Make sure the nose wheel steering operates:

(a) Operate the steering to the left, right and center using the rudder pedals or small steering angle inputs with the steering tiller.

NOTE: This will minimize the chance of NLG tire damage.

SUBTASK 32-31-71-860-026

(8) Move the ALT NOSE WHEEL STEERING switch on the P-1 Captain's panel to the NORM position.

SUBTASK 32-31-71-710-014

(9) Make sure the nose wheel steering does not operate.

(a) Operate the steering to the left, right and center using the rudder pedals or small steering angle inputs with the steering tiller.

SUBTASK 32-31-71-860-027

(10) Remove power from Hydraulic System B: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-31-71-070-001

(11) To check the PSEU for stored faults using the self test, do this task: Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test, TASK 32-09-10-740-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Electrical Gear and Door System
Figure 402/32-31-71-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR EXTENSION AND RETRACTION - ADJUSTMENT/TEST

1. General

A. This procedure has these two tasks:

(1) The first task does an extension/retraction test of the main landing gear after you replaced or adjusted a landing gear component.

(2) The second task does an operational test of the main landing gear.

B. The times for gear retraction in the operational test depend on the hydraulic flow rate. The retraction times given in this procedure are based on a minimum flow rate of 19 gpm at a hydraulic system pressure of 3000 +/-150 psi. Hydraulic pressure can be supplied by a hydraulic test bench or the engine driven pumps to give this minimum flow rate.

NOTE: System losses due to pressure drops and overall hydraulic system internal leakage may require a higher flow rate to achieve optimum retraction times. A hydraulic cart with a higher flow rate capacity is necessary to achieve the stated retraction times.

C. The electric motor driven pump (EMDP) can be used for the component replacement test. When you use the EMDP operate only one landing gear at a time. The EMDP provides a hydraulic flow rate of approximately 6 gpm. This lower rate causes slower landing gear operation, especially if you operate more than one gear at the same time. Do not use the EMDP to measure extension/retraction times.

D. After the landing gear structural or system component replacement, the component replacement test is permitted in most cases. If you are troubleshooting slow landing gear extension, it is recommended to do the operational test.

TASK 32-32-00-710-802

2. Main Landing Gear Test - Component Replacement

(Figure 501)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-10-740-801	Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test (P/B 501)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Prepare for the Test

SUBTASK 32-32-00-480-003

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-00-860-055

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-32-00-580-003

(3) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-32-00-860-034

(4) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7

SUBTASK 32-32-00-860-036

(5) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-32-00-080-002

(6) Remove the downlock pin from the main landing gear that you will test. To do this, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-32-00-860-037

(7) Make sure the control lever for the landing gear is in the DN position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-00-860-038

(8) Make sure that all the gear red lights on the P2-3 panel are off.

SUBTASK 32-32-00-860-039

(9) Make sure that all the gear green lights on the P2-3 panel are on.

SUBTASK 32-32-00-860-040

(10) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-00-860-041

WARNING	MAKE SURE THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM IS OPEN BEFORE YOU MOVE THE THRUST LEVERS. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE WEATHER RADAR SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(11) Move the two thrust levers to the full forward position.

D. Test of Normal Extension and Retraction

SUBTASK 32-32-00-710-007

WARNING	MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE MAIN LANDING GEAR. FAST MOVEMENT OF THE MAIN LANDING GEAR CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Move the control lever for the landing gear to UP and make sure the landing gear retracts.

NOTE: Do not use the lever lock override trigger.

SUBTASK 32-32-00-860-042

(2) Make sure the green and red lights for the landing gear you retracted are off.

SUBTASK 32-32-00-860-043

(3) Move the control lever for the landing gear to the OFF position.

SUBTASK 32-32-00-860-044

(4) Make sure the green and red lights for the landing gear you retracted are off.

SUBTASK 32-32-00-710-008

(5) Move the control lever to the DN position and make sure the landing gear extends.

SUBTASK 32-32-00-700-001

(6) Make sure the landing gear is down and locked and the three green lights for the landing gear are on.

SUBTASK 32-32-00-480-004

(7) Install the down lock pin in the main landing gear that you tested. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-00-580-004

(8) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-00-860-045

(9) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-32-00-860-054

(10) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-00-070-001

(11) To check the PSEU for stored faults using the self test, do this task: Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test, TASK 32-09-10-740-801.

——— END OF TASK ———

TASK 32-32-00-710-801

3. Main Landing Gear Operational Test

(Figure 501)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
12-15-31-610-802	Main Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-10-740-801	Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test (P/B 501)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Prepare for the Test

SUBTASK 32-32-00-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-00-860-056

NOTE: Do not use the Electric Motor-Driven Pump (EMDP) to measure extension / retraction times.

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-32-00-710-011

(3) Make sure that the shock struts' pressure of the main landing gear is correct (TASK 12-15-31-610-802).

SUBTASK 32-32-00-580-001

(4) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-32-00-860-003

(5) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7

SUBTASK 32-32-00-860-005

(6) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-00-080-001

(7) Remove the downlock pins from the nose and main landing gear. To do this, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-32-00-860-007

(8) Make sure that the control lever for the landing gear is in the DN position.

SUBTASK 32-32-00-860-008

(9) Make sure that all the gear red lights on the P2-3 panel are off.

SUBTASK 32-32-00-860-009

(10) Make sure that all the gear green lights on the P2-3 and P5 aft overhead panel are on.

SUBTASK 32-32-00-860-010

(11) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-00-860-011

WARNING	MAKE SURE THAT THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM IS OPEN BEFORE YOU MOVE THE THRUST LEVERS. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE WEATHER RADAR SYSTEM. THE OPERATION CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(12) Move the two thrust levers to the full forward position.

D. Test of Normal Extension and Retraction

SUBTASK 32-32-00-710-001

WARNING	MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE MAIN LANDING GEAR. FAST MOVEMENT OF THE MAIN LANDING GEAR LEVER CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Move the control lever for the landing gear to UP and measure the time for the retraction.

NOTE: Measure the landing gear retraction time from the time the control lever is put in the UP position until all the landing gear red "disagree" lights go off. Use the right main gear red "disagree" light to measure the retraction time.

NOTE: Do not use the lever lock override trigger during the operational test.

NOTE: Do not use the EMDP to measure extension / retraction times.

(a) Make sure that the landing gear is up and locked in 9.0 seconds or less.

SUBTASK 32-32-00-860-013

(2) Make sure that the three green lights and three red lights for the landing gear are off.

SUBTASK 32-32-00-860-014

(3) Move the control lever for the landing gear to the OFF position.

SUBTASK 32-32-00-860-015

(4) Make sure that the three green lights and three red lights for the landing gear are off.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-00-710-002

(5) Move the control lever the DN position and measure the time for extension.

NOTE: Measure the landing gear extension time from the time the control lever is put in the DN position until all the landing gear green lights come on. Use the right main gear green light to measure the extension time.

(a) Make sure that the landing gear is down and locked in 13.0 seconds or less.

SUBTASK 32-32-00-860-017

(6) Move the control lever for the landing gear to the OFF position.

E. Test of the Transfer Valve for Landing Gear Retraction

SUBTASK 32-32-00-860-046

(1) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-32-00-860-047

(2) For hydraulic systems A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-00-860-048

(3) For hydraulic systems B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-00-860-049

(4) Move the control lever for the landing gear to the DN position.

SUBTASK 32-32-00-720-001

WARNING MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE MAIN LANDING GEAR. FAST MOVEMENT OF THE MAIN LANDING GEAR LEVER CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

CAUTION RETRACTION OF THE LANDING GEAR CAUSES 0.5 GALLONS OF HYDRAULIC FLUID TO MOVE FROM SYSTEM B TO SYSTEM A. THIS CAN CAUSE THE SYSTEM A RESEVOIR TO FILL MORE THAN ITS MAXIMUM AND FLOW OUT. MAKE SURE THAT YOU COLLECT THIS HYDRAULIC FLUID IN A CONTAINER. IF YOU DO NOT OBEY, DAMAGE TO THE STRUCTURE AND EQUIPMENT CAN OCCUR.

(5) If it is necessary, put a container below the overflow port to catch any hydraulic fluid which may come out of the system.

Move the control lever for the landing gear to UP and measure the time for the retraction.

NOTE: Measure the landing gear retraction time from the time the control lever is put in the UP position until all the landing gear red "disagree" lights go off. Use the right main gear red "disagree" light to measure the retraction time.

NOTE: Do not use the lever lock override trigger during the operational test.

(a) Make sure that the landing gear is up and locked in 9.0 seconds or less.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-00-210-001

(6) Make sure that the three green lights and three red lights for the landing gear are off.

SUBTASK 32-32-00-720-002

(7) Move the control lever for the landing gear to the DN position.

(a) Make sure that the landing gear does not extend.

SUBTASK 32-32-00-860-050

(8) Move the control lever for the landing gear to the OFF position.

SUBTASK 32-32-00-860-051

(9) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-00-710-009

(10) Move the control lever for the landing gear to the DN position.

(a) Make sure that the landing gear is down and locked and the three green lights for the landing gear come on.

NOTE: Auxiliary landing gear position lights are located on the P5 aft overhead panel.

SUBTASK 32-32-00-860-052

(11) For hydraulic systems A and B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-00-480-005

(12) Install the down lock pins in the nose and main landing gear. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-00-610-002

(13) If it is necessary, fill the two hydraulic reservoirs with hydraulic fluid. To do this, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

SUBTASK 32-32-00-710-010

(14) Move the two thrust levers to the idle position.

SUBTASK 32-32-00-910-001

(15) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-32-00-860-053

(16) Close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-32-00-070-002

(17) To check the Proximity Sensor Electronics Unit (PSEU) for stored faults using the self test, do this task: Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test, TASK 32-09-10-740-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

G08680 S0006575176_V2

Main Gear Extension and Retraction Test
Figure 501/32-32-00-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR ACTUATOR ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure contains the following tasks:

(1) A removal of the actuator assembly for the main landing gear.

(2) An installation of the actuator assembly for the main landing gear.

B. Actuator assembly for the main landing gear is referred to as the actuator assembly [2] in this procedure.

TASK 32-32-11-000-801

2. Removal of the Actuator Assembly for the Main Gear

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1870	Hoist - Retract Actuator, Main Landing Gear Part #: C32028-109 Supplier: 81205 Part #: C32028-110 Supplier: 81205 Part #: C32028-111 Supplier: 81205 Opt Part #: C32028-1 Supplier: 81205 Opt Part #: C32028-3 Supplier: 81205 Opt Part #: C32028-56 Supplier: 81205 Opt Part #: C32028-58 Supplier: 81205 Opt Part #: C32028-59 Supplier: 81205

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
551	Left Wing - Rear Spar To Landing Gear Support Beam
651	Right Wing - Rear Spar to Landing Gear Support Beam
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

D. Access Panels

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Number	Name/Location
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

E. Prepare for the Removal

SUBTASK 32-32-11-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-11-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-11-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-32-11-010-001

(4) Open the applicable access panels:

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

F. Actuator Assembly Removal

SUBTASK 32-32-11-020-001

(1) Disconnect the hydraulic line [27] UP and hydraulic line [28] DN from the actuator assembly [2].

SUBTASK 32-32-11-480-002

(2) Install plugs in the hydraulic hoses.

SUBTASK 32-32-11-480-003

(3) Install the hoist, SPL-1870.

SUBTASK 32-32-11-980-001

(4) Hold the head end of the actuator assembly [2] in position with the hoist, SPL-1870.

SUBTASK 32-32-11-020-002

(5) Remove these parts to disconnect the beam hanger [3] from the structure:

(a) pin [5]

(b) nut [6]

(c) washer [7]

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) bolt [4].

SUBTASK 32-32-11-020-003

(6) Hold the beam assembly [1] and actuator assembly [2] and remove these parts to disconnect the beam assembly [1] from the main gear trunnion:

(a) pin [12], nut [11], washer [10], and bolt [17]

(b) nut [18] and washer [19]

(c) walking beam attach pin [16].

SUBTASK 32-32-11-020-004

(7) Hold the beam assembly [1] and actuator assembly [2] and remove these parts to disconnect the actuator assembly [2] from the main gear trunnion:

(a) pin [12], nut [11], washer [10], and bolt [8]

(b) nut [9] and washer [13]

(c) spacers [14]

(d) actuator attach pin [15].

SUBTASK 32-32-11-020-005

(8) Remove the beam assembly [1] and actuator assembly [2] with the hoist, SPL-1870.

SUBTASK 32-32-11-080-001

(9) Remove the hoist, SPL-1870 from the beam assembly [1] and actuator assembly [2].

SUBTASK 32-32-11-020-006

(10) Do these steps to remove the actuator assembly [2] from the beam assembly [1] and the beam hanger [3]:

(a) Remove the pin [12], nut [11], washer [10], and bolt [17].

(b) Remove the nut [21] and washer [22].

(c) Remove the pin [20].

(d) Remove the actuator assembly [2].

SUBTASK 32-32-11-020-007

(11) Do these steps if the replacement actuator assembly [2] does not have a restrictor [23] and union [26] installed:

(a) Remove the restrictor [23] and the union [26] from the actuator assembly [2].

(b) Remove and discard the packing [24], and packing [25].

(c) Install plugs in the ports on the actuator assembly [2].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR ACTUATOR (ACCESS PANEL, OUTER WING DOOR, AND SHOCK STRUT DOOR REMOVED)

A

G20713 S0006575180_V2

Main Gear Actuator Assembly Installation
Figure 401/32-32-11-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR ACTUATOR (ACCESS PANEL REMOVED AND RETRACT ACTUATOR HOIST TOOL INSTALLED)

1 USE FASTENER LOCATIONS NUMBERS 9 AND 11 FOR THE AFT OUTBOARD LEG OF THE HOIST EQUIPMENT.

B

G20722 S0006575181_V2

Main Gear Actuator Assembly Installation
Figure 401/32-32-11-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Gear Actuator Assembly Installation
Figure 401/32-32-11-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G20769 S0006575183_V2

Main Gear Actuator Assembly Installation
Figure 401/32-32-11-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G21285 S0006575184_V3

Main Gear Actuator Assembly Installation
Figure 401/32-32-11-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-11-400-801

3. Installation of the Actuator Assembly for the Main Gear

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-21-11 P/B 301	MAIN LANDING GEAR - SERVICING
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)
32-32-00-710-802	Main Landing Gear Test - Component Replacement (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1870	Hoist - Retract Actuator, Main Landing Gear Part #: C32028-109 Supplier: 81205 Part #: C32028-110 Supplier: 81205 Part #: C32028-111 Supplier: 81205 Opt Part #: C32028-1 Supplier: 81205 Opt Part #: C32028-3 Supplier: 81205 Opt Part #: C32028-56 Supplier: 81205 Opt Part #: C32028-58 Supplier: 81205 Opt Part #: C32028-59 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Beam assembly	32-32-11-01-085	LOM ALL
		32-32-93-01-095	LOM ALL
2	Actuator assembly	32-32-11-01-135	LOM ALL
5	Pin	32-32-93-01-010	LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
12	Pin	32-32-11-01-010	LOM ALL
		32-32-11-01-095	LOM ALL
		32-32-93-01-030	LOM ALL
24	Packing	32-32-11-01-170	LOM ALL
25	Packing	32-32-11-01-165	LOM ALL
26	Union	32-32-11-01-155	LOM ALL
		32-32-11-01-160	LOM ALL

E. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
551	Left Wing - Rear Spar To Landing Gear Support Beam
651	Right Wing - Rear Spar to Landing Gear Support Beam
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

F. Access Panels

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

G. Prepare for the Installation

SUBTASK 32-32-11-100-001

(1) Clean the surfaces of these items that will attach the beam hanger [3] to the structure:

(a) attachment fitting on the beam hanger [3]

(b) bolt [4], washer [7], and nut [6].

SUBTASK 32-32-11-100-002

(2) Clean these items that will attach the actuator assembly [2] to the main gear trunnion:

(a) attachment fitting on the main gear trunnion

(b) actuator attach pin [15]

(c) spacers [14], washer [13], and nut [9]

(d) pin [12], nut [11], washer [10], and bolt [8].

SUBTASK 32-32-11-100-003

(3) Clean the surfaces of these items that will attach the beam assembly [1] and actuator assembly [2] to the main gear trunnion:

(a) attachment fitting on the main gear trunnion

(b) walking beam attach pin [16]

(c) washer [19] and nut [18]

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) pin [12], nut [11], washer [10], and bolt [17].

SUBTASK 32-32-11-600-004

(4) Apply grease, D00633, to the chrome-plated surfaces of the bolt [4], pin [20], actuator attach pin [15], and the walking beam attach pin [16].

SUBTASK 32-32-11-600-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(5) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs and threads of the bolt [4], nut [6], and to the face of the washer [7].

SUBTASK 32-32-11-600-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(6) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these parts:

(a) the faces of the washer [13] and washer [19]

(b) the threads and thread reliefs on the actuator attach pin [15] and walking beam attach pin [16]

(c) the threads and thread reliefs of the bolt [8], bolt [17], faces of the washers [10], threads and thread reliefs of the nuts [11], and pin [12].

SUBTASK 32-32-11-420-001

(7) Do these steps if the replacement actuator assembly [2] does not have the restrictor [23] and union [26] installed:

(a) Lubricate these items with hydraulic fluid, D00153:

1) packing [24]

2) packing [25]

3) restrictor [23]

4) union [26].

(b) Remove the plugs from the ports on the actuator assembly [2].

(c) Install the packing [24] and packing [25] on the actuator assembly [2].

(d) Tighten the restrictor [23] to 500 ±25 in-lb (56 ±3 N·m) on the actuator assembly [2].

(e) Tighten the union [26] to 270 ±14 in-lb (31 ±2 N·m) on the actuator assembly [2].

H. Actuator Assembly Installation

SUBTASK 32-32-11-420-002

(1) Do these steps to connect the actuator assembly [2] to the beam assembly [1]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Install the actuator assembly [2] between the beam hanger [3] and the beam assembly [1] with the hydraulic ports down.

> **CAUTION** MAKE SURE THAT THE HEAD OF THE PIN IS POINTED AFT. THE INCORRECT ORIENTATION OF THE PIN CAN CAUSE DAMAGE TO THE MAIN-LANDING-GEAR (MLG) SUPPORT BEAM.

(b) Install the pin [20].

(c) Install the washer [22] and nut [21].

(d) Tighten the nut [21] to 35 ft-lb (47.45 N·m) - 50 ft-lb (67.79 N·m).

(e) If it is necessary, loosen the nut [21] to align the nearest castellation.

(f) Install the bolt [17], washer [10], and nut [11].

(g) Tighten the nut [11] to 50 in-lb (5.65 N·m) - 75 in-lb (8.47 N·m).

(h) If it is necessary, loosen the nut [11] to align the nearest castellation.

(i) Install the pin [12].

SUBTASK 32-32-11-480-004

(2) Connect the beam assembly [1] and actuator assembly [2] to the hoist, SPL-1870.

SUBTASK 32-32-11-420-003

(3) Put the beam hanger [3] in its position in the bracket on the structure.

SUBTASK 32-32-11-420-004

(4) Install these parts to connect the beam hanger [3] to the bracket on the wing structure:

(a) bolt [4], washer [7], and nut [6]

1) Tighten the nut [6] to 250 in-lb (28.25 N·m) - 300 in-lb (33.90 N·m).

2) If it is necessary, loosen the nut [6] to align the nearest castellation.

(b) Install the pin [5].

SUBTASK 32-32-11-420-005

(5) Install these parts to connect the actuator assembly [2] to the main gear trunnion:

(a) actuator attach pin [15], spacers [14], washer [13], and nut [9]

1) Remove the clamps for the electrical conduit on the inboard side of the nut [9] and move the conduit to get clearance to tighten the nut [9].

2) Tighten the nut [9] to 50 ft-lb (67.79 N·m) - 75 ft-lb (101.69 N·m).

3) If it is necessary, loosen the nut [9] to align the nearest castellation.

(b) bolt [8], washer [10], and nut [11]

1) Tighten the nut [11] to 45 in-lb (5.08 N·m) - 55 in-lb (6.21 N·m).

2) If it is necessary, loosen the nut [11] to align the nearest castellation.

(c) pin [12].

SUBTASK 32-32-11-410-004

(6) Put the electrical conduit back in its position and install the clamps.

SUBTASK 32-32-11-420-006

(7) Hold the beam assembly [1], actuator assembly [2] and install these parts to connect the beam assembly [1] to the main gear trunnion:

(a) walking beam attach pin [16] with the pin head forward

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) washer [19] and nut [18]

1) Tighten the nut [18] to 50 ft-lb (67.79 N·m) - 75 ft-lb (101.69 N·m).

2) If it is necessary, loosen the nut [18] to align the nearest castellation.

(c) bolt [17], washer [10], and nut [11]

1) Tighten the nut [11] to 45 in-lb (5.08 N·m) - 55 in-lb (6.21 N·m).

2) If it is necessary, loosen the nut [11] to align the nearest castellation.

(d) pin [12].

SUBTASK 32-32-11-080-002

(8) Remove the hoist, SPL-1870.

SUBTASK 32-32-11-080-003

(9) Remove the plugs from hydraulic line [27] and hydraulic line [28].

SUBTASK 32-32-11-420-007

(10) Connect the hydraulic line [27] UP to the actuator assembly [2].

SUBTASK 32-32-11-420-008

(11) Tighten the B-nut on the hydraulic line [27] UP to a value of 475 in-lb (53.67 N·m) - 525 in-lb (59.32 N·m).

SUBTASK 32-32-11-420-009

(12) Connect the hydraulic line [28] DN to the actuator assembly [2].

SUBTASK 32-32-11-420-010

(13) Tighten the B-nut on the hydraulic line [28] DN to a value of 256 in-lb (28.92 N·m) - 284 in-lb (32.09 N·m).

I. Main Gear Actuator Assembly - Bleeding (Airplane on Jacks)

SUBTASK 32-32-11-580-004

WARNING	MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Lift the airplane for landing gear retraction, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-32-11-640-001

(2) Lubricate the attach points (MAIN LANDING GEAR - SERVICING, PAGEBLOCK 12-21-11/301).

SUBTASK 32-32-11-080-005

(3) Remove the downlock pins from the main landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-32-11-860-004

(4) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-11-700-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN THE NOSE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE NOSE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) Do a retraction test of the main landing gear, do this task: Main Landing Gear Operational Test, TASK 32-32-00-710-801 or Main Landing Gear Test - Component Replacement, TASK 32-32-00-710-802.

SUBTASK 32-32-11-480-008

(6) Extend the main landing gear and install the downlock pins, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-11-210-003

(7) Examine the hydraulic connections for leaks.

SUBTASK 32-32-11-210-004

(8) Make sure that there is no interference of the hoses and actuator assembly [2] during gear operation.

SUBTASK 32-32-11-860-005

(9) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-11-580-005

(10) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

J. Main Gear Actuator Assembly - Bleeding (Airplane on Ground Without Jacks) - Alternate Method

SUBTASK 32-32-11-210-005

(1) Make sure that the hydraulic lines are installed correctly and they are not twisted.

SUBTASK 32-32-11-860-006

> **WARNING** OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose or main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-11-860-012

(3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-11-860-008

(4) Push the override button, and move the control lever for the landing gear from the DN position to the UP position and to the DN position three times.

NOTE: Hold the lever in each position for three seconds before you move the control lever to the subsequent position.

SUBTASK 32-32-11-860-009

(5) Move the control lever to the DN position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-11-860-010

(6) When you move the control lever from the DN position to the OFF position, make sure that the condition that follows occurs:

(a) The rod end of the actuator tries to extend.

SUBTASK 32-32-11-860-011

(7) Move the control lever to the DN position.

SUBTASK 32-32-11-200-001

(8) Make sure that there are no leaks at the hydraulic connections.

SUBTASK 32-32-11-860-007

(9) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-11-600-005

(10) Lubricate the attach points (MAIN LANDING GEAR - SERVICING, PAGEBLOCK 12-21-11/301).

K. Put the Airplane Back to Its Usual Condition

SUBTASK 32-32-11-410-003

(1) Close the applicable access panel:

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR ACTUATOR ASSEMBLY - INSPECTION/CHECK

1. General

A. This task has the data for a dimensional inspection of the actuator assembly for the main landing gear. No procedure is given in this section to get access to permit the inspection. The actuator assembly must be removed to do the inspection. These are the tasks:

- Removal of the Actuator Assembly for the Main Gear, TASK 32-32-11-000-801
- Installation of the Actuator Assembly for the Main Gear, TASK 32-32-11-400-801

LOM 402, 404, 406 PRE SB 737-32-1369

B. This task gives you the procedure to examine the main landing gear actuator for internal leakage.

LOM ALL

TASK 32-32-11-200-801

2. Main Gear Actuator Assembly Inspection

(Figure 601)

A. General

(1) This procedure gives wear limits and repair data for the main gear actuator assembly.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-11-000-801	Removal of the Actuator Assembly for the Main Gear (P/B 401)
32-32-11-400-801	Installation of the Actuator Assembly for the Main Gear (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1096	Micrometer - Depth, 0-1 inch, Readable to 1/1000 inch
STD-1097	Caliper - Vernier, 0-6 inch, Readable to 1/1000 inch

D. Location Zones

Zone	Area
551	Left Wing - Rear Spar To Landing Gear Support Beam
651	Right Wing - Rear Spar to Landing Gear Support Beam
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Procedure

SUBTASK 32-32-11-480-006

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-11-020-008

(2) To remove parts to get access to the actuator assembly for the main landing gear, do the task that follows (Figure 601):

(a) Do this task: Removal of the Actuator Assembly for the Main Gear, TASK 32-32-11-000-801.

SUBTASK 32-32-11-020-009

(3) Use these tools to check for wear on the parts of the main gear actuator assembly:

(a) micrometer (0-1 inch, readable to 1/1000 inch), STD-1096

(b) vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097

SUBTASK 32-32-11-020-010

(4) Examine the parts of the actuator assembly for worn areas:

(a) Remove the parts to be checked.

(b) Measure the parts as necessary with a micrometer (0-1 inch, readable to 1/1000 inch), STD-1096 or a vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

(c) Compare the dimensions you measured with the permitted wear dimensions that follow.

(d) If the parts are not in the tolerance, replace or repair the part as required.

Table 601/32-32-11-993-801

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
[1] BEARING	I.D.	1.4995 in 38.087 mm	1.5000 in 38.100 mm	1.5020 in 38.151 mm	.004 in .102 mm
[1] PIN	O.D.	1.4980 in 38.049 mm	1.4990 in 38.075 mm	1.4970 in 38.024 mm	
[2] BUSHING	I.D.	1.5007 in 38.118 mm	1.5020 in 38.151 mm	in mm	.004 in .102 mm
[2] PIN	O.D.	1.4980 in 38.049 mm	1.4990 in 38.075 mm	1.4970 in 38.024 mm	
[3] BUSHING	I.D.	1.7000 in 43.180 mm	1.7010 in 43.205 mm	1.7030 in 43.256 mm	.006 in .152 mm
[3] PIN	O.D.	1.6980 in 43.129 mm	1.6990 in 43.155 mm	1.6970 in 43.104 mm	
[4] BEARING	I.D.	1.7000 in 43.180 mm	1.7015 in 43.218 mm	1.7030 in 43.256 mm	.006 in

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Table 601/32-32-11-993-801 (Continued)

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
[4] PIN	O.D.	1.6980 in 43.129 mm	1.6990 in 43.155 mm	1.6970 in 43.104 mm	.152 mm
[5] BUSHING	I.D.	1.7000 in 43.180 mm	1.7014 in 43.205 mm	1.7030 in 43.256 mm	.004 in
[5] PIN	O.D.	1.6980 in 43.129 mm	1.6990 in 43.155 mm	1.6974 in 43.113 mm	.102 mm
[6] BUSHING	I.D.	1.7008 in 43.200 mm	1.7022 in 43.236 mm	1.7030 in 43.256 mm	.004 in
[6] PIN	O.D.	1.6980 in 43.129 mm	1.6990 in 43.155 mm	1.6970 in 43.104 mm	.102 mm
[7] BUSHING	I.D.	1.7013 in 43.213 mm	1.7027 in 43.249 mm	1.7060 in 43.332 mm	.007 in
[7] PIN	O.D.	1.6980 in 43.129 mm	1.6990 in 43.155 mm	1.6970 in 43.104 mm	.178 mm
[8] BUSHING	I.D.	1.1875 in 30.162 mm	1.1881 in 30.178 mm	in mm	.000 in
[8] BUSHING	O.D.	1.1893 in 30.208 mm	1.1898 in 30.221 mm	in mm	.000 mm
[9] BUSHING	I.D.	1.0005 in 25.413 mm	1.0015 in 25.438 mm	1.0040 in 25.502 mm	.005 in
[9] PIN	O.D.	0.9985 in 25.362 mm	0.9990 in 25.375 mm	0.9965 in 25.311 mm	.127 mm
[10] BUSHING	I.D.	1.0005 in 25.413 mm	1.0015 in 25.438 mm	1.0040 in 25.502 mm	.005 in
[10] PIN	O.D.	0.9985 in 25.362 mm	0.9990 in 25.375 mm	0.9965 in 25.311 mm	.127 mm

SUBTASK 32-32-11-020-011

(5) To install parts on the actuator assembly for the main gear do the task that follows:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Do this task: Installation of the Actuator Assembly for the Main Gear, TASK 32-32-11-400-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR ACTUATOR
(ACCESS PANEL 551DB (651DB), OUTER WING DOOR,
AND SHOCK STRUT DOOR REMOVED)

A

G67723 S0006575189_V3

Main Gear Actuator Assembly Wear Limits
Figure 601/32-32-11-990-802 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR ACTUATOR
(ACCESS PANEL REMOVED)

B

G68255 S0006575190_V2

Main Gear Actuator Assembly Wear Limits
Figure 601/32-32-11-990-802 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BEAM HANGER PIN

C

A-A

B-B

G67920 S0006575191_V2

Main Gear Actuator Assembly Wear Limits
Figure 601/32-32-11-990-802 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C-C

D-D

G68246 S0006575192_V2

Main Gear Actuator Assembly Wear Limits
Figure 601/32-32-11-990-802 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406 PRE SB 737-32-1369

TASK 32-32-11-200-802

3. Main Gear Actuator Assembly Internal Leakage Check

Figure 601

A. General

(1) This task gives you the procedure to examine the main landing gear actuator for internal leakage.

B. References

Reference	Title
29-11-00 P/B 201	HYDRAULIC SYSTEMS A AND B - MAINTENANCE PRACTICES
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-11 P/B 401	MAIN GEAR ACTUATOR ASSEMBLY - REMOVAL/INSTALLATION

C. Location Zones

Zone	Area
551	Left Wing - Rear Spar To Landing Gear Support Beam
651	Right Wing - Rear Spar to Landing Gear Support Beam
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

D. Access Panels

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

E. Procedure

SUBTASK 32-32-11-480-007

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-11-864-001

(2) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805

SUBTASK 32-32-11-010-004

(3) Gain access to the main gear actuators by removing these access panels:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406 PRE SB 737-32-1369 (Continued)

(Continued)

Number	Name/Location
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

SUBTASK 32-32-11-030-001

WARNING MAKE SURE THAT YOU DISCONNECT THE GEAR-UP HOSE ASSEMBLY. THE GEAR-UP HOSE ASSEMBLY CONNECTS TO THE EXTEND (EXT) PORT OF THE MAIN GEAR ACTUATOR. IF YOU DISCONNECT THE INCORRECT HOSE, HIGH-PRESSURE HYDRAULIC FLUID WILL COME OUT OF THE HOSE. HIGH-PRESSURE HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL.

(4) Disconnect the gear UP hose assembly that connects to the actuator at the fitting in the wing root area.

NOTE: The gear UP hose assembly is the one that is connected to the extend port (EXT) of the main landing gear actuator.

(5) Make sure that the actuator end of the hose is connected to the actuator.

(6) Put a cap on the open hydraulic fitting.

SUBTASK 32-32-11-616-001

(7) Direct the open end of the gear UP hose assembly into a suitable container and drain the hose until no more fluid drips out of it.

SUBTASK 32-32-11-863-001

(8) Make sure that the landing gear lever is in the DOWN position.

(9) Do this task to pressurize hydraulic system A: HYDRAULIC SYSTEMS A AND B - MAINTENANCE PRACTICES, PAGEBLOCK 29-11-00/201

SUBTASK 32-32-11-790-001

(10) Measure the quantity of fluid that leaks out of the gear UP hose assembly.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

(a) If the amount of fluid that leaks out of the gear UP hose assembly is equal to or greater than 30 cc/min, replace the main landing gear actuator assembly at the next maintenance opportunity. Do this task: MAIN GEAR ACTUATOR ASSEMBLY - REMOVAL/INSTALLATION, PAGEBLOCK 32-32-11/401.

(b) If the amount of the fluid that leaks out of the gear UP hose assembly is less than 30 cc/min but more than 5cc/min, repeat the internal leakage test at 1000 cycles until the main landing gear actuator assembly is replaced.

(c) If the amount of fluid that leaks out of the gear UP hose assembly equal to or less than 5cc/min, repeat the internal leakage test at 3000 cycles until the main landing gear actuator assembly is replaced.

SUBTASK 32-32-11-864-002

(11) Remove pressure from hydraulic system A: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406 PRE SB 737-32-1369 (Continued)

SUBTASK 32-32-11-430-001

(12) Reconnect the hose assembly to the hydraulic fitting in the wing root area. Make sure that the hose is put through the hose guide before you tighten the hose fitting.

SUBTASK 32-32-11-863-002

(13) Do this task to pressurize hydraulic system A: HYDRAULIC SYSTEMS A AND B - MAINTENANCE PRACTICES, PAGEBLOCK 29-11-00/201

SUBTASK 32-32-11-870-001

(14) Operate the landing gear lever from DOWN to UP to DOWN ten times to bleed air from the hydraulic lines and actuator. Wait a minimum three seconds between each lever movement.

(a) Examine the hydraulic connections for leakage.

SUBTASK 32-32-11-864-003

(15) Remove pressure from hydraulic system A: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-11-410-006

(16) Close these access panels:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

SUBTASK 32-32-11-840-001

(17) Put the airplane back to Its usual condition.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR RETRACT PRESSURE FUSES - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) A removal of the retract pressure fuses for the main landing gear

(2) An installation of the retract pressure fuses for the main landing gear

TASK 32-32-21-000-801

2. Removal of the Retract Pressure Fuses for the Main Gear

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-32-21-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-21-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-21-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Retract Pressure Fuse Removal

SUBTASK 32-32-21-020-001

(1) Remove the screws [1], washers [2], and clipnuts [3] that hold the hydraulic lines to the structure on the two ends of the retract pressure fuse [4].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-21-020-002

(2) Disconnect the hydraulic lines from the retract pressure fuse [4].

SUBTASK 32-32-21-480-002

(3) Install caps on the hydraulic lines.

SUBTASK 32-32-21-020-004

(4) If it is necessary, remove the reducer [5] from the retract pressure fuse [4].

SUBTASK 32-32-21-020-003

(5) Remove the retract pressure fuse [4] from the airplane.

E. Test the Retract Pressure Hydraulic Fuse

SUBTASK 32-32-21-720-001

(1) Do the functional test of the pressure hydraulic fuse with the supplier's recommended component maintenance test instructions and test equipment.

NOTE: The supplier's instructions give a reverse flow test, internal leakage test, pressure drop test, volumetric capacity test and reset test for the fuse. This is an off-airplane bench test.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Gear Retract Pressure Fuse Installation
Figure 401/32-32-21-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-21-400-801

3. Installation of the Retract Pressure Fuses for the Main Gear

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Retract pressure fuse	32-32-21-01-015	LOM 422-434, 437-447, 450-999
		32-32-21-02-025	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

D. Retract Pressure Fuse Installation

SUBTASK 32-32-21-080-002

(1) Remove the caps from the unions and the hydraulic lines that will connect to the retract pressure fuse [4].

SUBTASK 32-32-21-420-001

(2) Put the retract pressure fuse [4] in position to align it with the hydraulic lines.

SUBTASK 32-32-21-420-006

(3) If it is necessary, install the reducer [5] on the retract pressure fuse [4].

(a) Tighten reducer [5] to the 700 ±35 in-lb (79 ±4 N·m).

SUBTASK 32-32-21-420-004

(4) Connect the hydraulic lines to the reducer [5].

SUBTASK 32-32-21-420-005

(5) Tighten the B-nuts on the hydraulic lines to the value of 500 ±25 in-lb (56 ±3 N·m).

SUBTASK 32-32-21-420-003

(6) Install the screws [1], washers [2], and clipnuts [3] for the clamps that hold the hydraulic lines to the structure on the two ends of the retract pressure fuse [4].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Installation Test of the Retract Pressure Fuse

SUBTASK 32-32-21-480-003

> **WARNING** MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE MAIN LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE GEAR RETRACTS, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-21-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-21-700-001

(3) Use the override trigger to move the control lever for the landing gear from the DN position to the UP position.

SUBTASK 32-32-21-710-001

(4) Make sure that the UP hose of the main gear retract actuator moves to show that hydraulic pressure is applied when the control lever is moved to the UP position.

SUBTASK 32-32-21-700-002

(5) Move the control lever to the DN position.

SUBTASK 32-32-21-700-003

(6) Make sure that the DOWN hose on the main gear retract actuator moves when you move the control lever from the UP position to the DOWN position.

SUBTASK 32-32-21-210-001

(7) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-32-21-210-004

(8) Make sure that there are no leaks in the hydraulic connections.

SUBTASK 32-32-21-860-003

(9) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-21-840-001

(10) Examine the hydraulic reservoirs for the correct servicing (TASK 12-12-00-610-801).

(a) Do a servicing if it is necessary.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR UPLOCK ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the uplock assembly for the main landing gear

(2) An installation of the uplock assembly for the main landing gear.

TASK 32-32-31-000-801

2. Main Gear Uplock Assembly Removal

(Figure 401, Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-34-21-000-801	Removal of the Manual Extension Mechanism for the Main Gear (P/B 401)
32-61-21-020-801	Main Landing Gear Uplock Sensor Removal (P/B 401)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-32-31-480-001

> **WARNING**
> MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear (TASK 32-00-01-480-801).

SUBTASK 32-32-31-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-31-580-001

(3) Install chocks around the tires of the main landing gear (TASK 10-11-05-500-801 or TASK 10-11-05-500-802).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-31-020-001

(4) Remove the uplock sensors from the uplock assembly [9] (TASK 32-61-21-020-801).

D. Main Gear Uplock Assembly Removal

SUBTASK 32-32-31-020-009

(1) Put tags on the two hydraulic lines to show their connection locations.

SUBTASK 32-32-31-020-002

(2) Disconnect the two hydraulic lines from the uplock actuator.

SUBTASK 32-32-31-480-002

(3) Install plugs in the two hydraulic lines.

SUBTASK 32-32-31-020-020

(4) Disconnect the control rod of the manual extension mechanism from the uplock assembly [9] (TASK 32-34-21-000-801).

SUBTASK 32-32-31-020-003

(5) If it is necessary to remove the hanger assembly [19], remove the pins [13], nuts [12], uplock washers [11], and uplock hanger pins [10] to disconnect the hanger assembly [19].

SUBTASK 32-32-31-020-004

(6) Remove the pin [8], nut [7], uplock washer [6], and uplock attach pin [14] to disconnect the uplock assembly [9] from the structure.

SUBTASK 32-32-31-020-005

(7) Remove uplock assembly [9].

SUBTASK 32-32-31-020-006

(8) Remove the pin [5], nut [4], washer [3], bolt [1] and bushing [2] to disconnect the hanger assembly [19] from the structure.

SUBTASK 32-32-31-020-007

(9) Remove the hanger assembly [19].

SUBTASK 32-32-31-020-008

(10) If the uplock actuator on the replacement uplock assembly does not have hydraulic fittings installed, do these steps:

(a) Remove the union [18] and the restrictor [16] from the uplock actuator.

(b) Remove and discard the packing [15], and packing [17].

(c) Install plugs in the ports on the uplock actuator.

——— **END OF TASK** ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Uplock Assembly Installation
Figure 401/32-32-31-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Uplock Assembly Installation
Figure 401/32-32-31-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Uplock Assembly Installation
Figure 401/32-32-31-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Uplock Assembly Installation
Figure 401/32-32-31-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F

2968911 S0000748238_V1

Main Landing Gear Uplock Assembly Installation
Figure 401/32-32-31-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

M50911 S0006575204_V2

Main Landing Gear Uplock Assembly Adjustment
Figure 402/32-32-31-990-803 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

M50919 S0006575205_V3

Main Landing Gear Uplock Assembly Adjustment
Figure 402/32-32-31-990-803 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C

M51017 S0006575206_V2

Main Landing Gear Uplock Assembly Adjustment
Figure 402/32-32-31-990-803 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-31-400-801

3. Main Gear Uplock Assembly Installation

(Figure 401, Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-13-21-000-801	Main Landing Gear Wing Door Adjustment (P/B 501)
32-34-21-400-801	Installation of the Manual Extension Mechanism for the Main Gear (P/B 401)
32-61-21-400-801	Main Landing Gear Uplock Sensor Installation (P/B 401)
32-61-21-820-801	Main Landing Gear Uplock Sensor Clearance Adjustment (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-12460	Removal/Installation Equipment - Spring, Uplock MLG and NLG Part #: J32037-106 Supplier: 81205
STD-858	Tag - DO NOT OPERATE
STD-4873	Rope - 0.5 inch (12.7 mm) Diameter

C. Consumable Materials

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00633	Grease - Aircraft General Purpose	BMS3-33
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38
G50316	Cloth - Clean, Dry, Lint-free, White, Cotton	

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D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Pin	32-32-31-02-055	LOM ALL
		32-32-31-02A-025	LOM ALL
8	Pin	32-32-31-02-030	LOM ALL
		32-32-31-02A-005	LOM ALL
9	Uplock assembly	32-32-31-02-105	LOM ALL
		32-32-31-02A-050	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-32-31-02A-055	LOM 422-434, 437-447, 450-999
13	Pin	32-32-31-02-145	LOM ALL
		32-32-31-02A-115	LOM ALL
15	Packing	32-32-41-01-035	LOM ALL
17	Packing	32-32-41-01-030	LOM ALL
27	Pin	32-13-21-01-202	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434
		32-13-21-04-210	LOM 437-447, 450-999
35	Pin	32-32-31-02-210	LOM ALL
		32-32-31-02A-150	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

F. Main Gear Uplock Assembly Installation

SUBTASK 32-32-31-420-001

(1) Do these steps if the replacement uplock actuator on the uplock assembly [9] does not have the union [18] or restrictor [16] installed:

(a) Lubricate the new packing [15], new packing [17], union [18], and restrictor [16] with hydraulic fluid, D00153.

(b) Remove the plugs from the ports on the uplock actuator.

(c) Install the packing [15], packing [17], union [18], and restrictor [16] in the uplock actuator.

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SUBTASK 32-32-31-600-001

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(2) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (optional), on the parts that follow:

(a) The threads and thread reliefs of the uplock attach pin [14] and nut [7].

(b) The faces of the uplock washer [6].

(c) The pin [8].

SUBTASK 32-32-31-640-001

(3) Lubricate the shank of the uplock attach pin [14] with grease, D00633.

SUBTASK 32-32-31-420-002

(4) Put the uplock assembly [9] in position on the structure.

SUBTASK 32-32-31-420-003

(5) Install the uplock attach pin [14], uplock washer [6], and nut [7] to attach the uplock assembly [9] to the structure.

SUBTASK 32-32-31-420-004

(6) Tighten the nut [7] to 50.0 in-lb (5.6 N·m) - 100.0 in-lb (11.3 N·m) above the run-on torque.

(a) Loosen to the nearest castellation, if it is necessary, and install the new pin [8].

SUBTASK 32-32-31-600-002

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(7) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (optional), to the parts that follow:

(a) The threads and thread reliefs of the uplock hanger pins [10] and nuts [12].

(b) The faces of the uplock washers [11].

(c) The pins [13].

SUBTASK 32-32-31-640-002

(8) Lubricate the shank of the uplock hanger pin [10] with grease, D00633.

SUBTASK 32-32-31-420-005

(9) Install uplock hanger pin [10], uplock washers [11], and nuts [12] to connect the hanger assembly [19] to the uplock assembly [9].

SUBTASK 32-32-31-420-006

(10) Tighten the nuts [12] to 20.0 in-lb (2.3 N·m) - 24.0 in-lb (2.7 N·m) above the run-on torque.

(a) Loosen to the nearest castellation, if it is necessary, and install the new pins [13].

SUBTASK 32-32-31-820-001

(11) Loosen the jamnut [20] on the rod end of the hanger assembly [19].

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(a) Adjust the rod end until the distance from the center of the bolt [1] to the top of the threaded end of the hanger assembly [19] is 2.17 in. (55.1 mm).

SUBTASK 32-32-31-600-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(12) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (optional), on the parts that follow:

(a) The threads and thread reliefs of the bolt [1] and nut [4].

(b) The faces of the washer [3].

(c) The pin [5].

SUBTASK 32-32-31-640-003

(13) Lubricate the shanks of the bolt [1] with a light film of grease, D00633.

(a) Wipe off excess grease.

SUBTASK 32-32-31-420-007

(14) Install the bolt [1], bushing [2], washer [3], nut [4], and pin [5] to attach the hanger assembly [19] to the structure.

NOTE: The installation of the hanger assembly rod end does not require the cotter pin to engage to the self locking nut castellations.

SUBTASK 32-32-31-420-013

(15) Check and adjust if needed, the 2.17 in. (55.12 mm) dimension from the center of bolt [1], to the top of the threaded end of the hanger under the jamnut [20].

SUBTASK 32-32-31-420-008

(16) Tighten the jamnut [20] on the rod end of the hanger assembly [19] to 200 in-lb (23 N·m) - 250 in-lb (28 N·m).

SUBTASK 32-32-31-420-009

(17) Install MS20995C32 lockwire, G01048, on the jamnut [20].

SUBTASK 32-32-31-420-030

(18) Connect the control rod of the manual extension mechanism to the uplock assembly [9] (TASK 32-34-21-400-801).

SUBTASK 32-32-31-420-012

(19) Do these steps to connect the two hydraulic lines to the uplock actuator:

(a) Remove the plugs from the two hydraulic lines.

(b) Connect the two hydraulic lines to the uplock actuator.

(c) Tighten the B-nuts on the hydraulic lines to the value of 140 ±7 in-lb (16 ±1 N·m).

(d) Remove the tags from the two hydraulic lines.

SUBTASK 32-32-31-420-010

(20) Install uplock sensors on the uplock assembly [9], do this task: Main Landing Gear Uplock Sensor Installation, TASK 32-61-21-400-801.

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SUBTASK 32-32-31-420-011

(21) Do the adjustment for the uplock sensors on the uplock assembly [9], do this task: Main Landing Gear Uplock Sensor Clearance Adjustment, TASK 32-61-21-820-801.

G. Main Landing Gear Uplock Spring and Spool Replacement with Spring Removal Tool

SUBTASK 32-32-31-020-015

(1) Remove the uplock spring [32] and spool [37].

NOTE: This procedure uses two spring removal tools. If only one tool is used, it is necessary to remove the spring on the nut side of the pin first before removing the spring on the head side of the pin.

(a) Install the spring removal tools from spring removal and installation equipment, SPL-12460, on the spools [37].

(b) Extend the spools [37] and uplock springs [32] a small amount to remove spring pressure from the pins [41].

(c) Remove the pin [35], nut [33], and washer [36] from the pin [41].

(d) Remove the pin [41] to disconnect the uplock springs [32] and spools [37] from the uplock assembly.

1) Make sure that you catch the spacers [39], spacers [40], washers [36], washers [38], and sleeves [34] that come loose when the pins [41] are removed.

(e) Remove the tension from the uplock springs [32] and remove the spools [37] and uplock springs [32] from the spring removal tools.

(f) Remove each spool [37] from uplock spring [32].

SUBTASK 32-32-31-420-017

(2) Install the uplock spring [32] and spool [37].

NOTE: This procedure uses two spring removal tools. If only one tool is used, it is necessary to install the spring on the head side of the pin first before installing the spring on the nut side of the pin.

(a) Install one end of the uplock spring [32] over one spool [37] and install the other end of the uplock spring [32] over the other spool [37].

(b) Put the uplock springs [32] and spools [37] in the spring removal tools from spring removal and installation equipment, SPL-12460.

(c) Lubricate the chrome surfaces of the pins [41] with grease, D00013, or grease, D00633.

(d) Put one washer [36] and one sleeve [34] on each pin [41].

(e) Put the pins [41] through the spools [37] on the uplock springs [32].

(f) Install one of the washer [38] and one spacer [39] or spacer [40] on each pin [41].

(g) Use a spring removal tools to align the spools [37] in the ends of the uplock springs [32] with the holes in the uplock hook assembly [42] and link assembly [43].

(h) Push the pins [41] through the uplock hook assembly [42] and link assembly [43] such that you can install the second spacer [39] or spacer [40] and washers [38].

(i) Push the pins [41] completely through the spools [37] on the other spring.

(j) Install the sleeves [34], washers [36], and nuts [33] on the pins [41].

(k) Remove the spring removal tools.

(l) Tighten the nuts [33] to 100 in-lb (11 N·m).

(m) Tighten the nuts [33] to the nearest castellation and install the pins [35].

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SUBTASK 32-32-31-420-022

(3) If only the uplock spring [32] and/or spool [37] is replaced, it is not necessary to perform a landing gear retraction test if the spring and/or spool [37] are replaced per this procedure.

H. Main Landing Gear Uplock Spring and Spool Replacement without Spring Removal Tool

SUBTASK 32-32-31-020-016

(1) Remove the broken or fractured uplock spring.

SUBTASK 32-32-31-020-019

(2) Remove spring(s) if they are not broken.

(a) Do not use metallic objects which could nick or damage the spring surface.

(b) Wrap a 0.5 inch (12.7 mm) diameter rope, STD-4873, or cotton cloth, G50316, around one end of the uplock spring [32].

(c) Pull the spring end over the spool assembly.

NOTE: Approximately 30 lbf (133 N) of force per 1.0 in. (25.4 mm) of spring extension is necessary.

(d) Slowly release tension after spring end is out of the spool.

(e) Remove spring from other end of spool.

SUBTASK 32-32-31-020-017

(3) Install the uplock spring [32].

(a) Do not use metallic objects which could nick or damage the spring surface.

(b) With one end of the uplock spring [32] on one spools [37], put a 0.5 inch (12.7 mm) diameter rope, STD-4873, or cotton cloth, G50316, around the other end of the uplock spring [32].

(c) Pull the free spring end over the other spool assembly.

NOTE: Approximately 30 lbf (133 N) of force per 1.0 in. (25.4 mm) of spring extension is necessary.

(d) Remove the 0.5 inch (12.7 mm) diameter rope, STD-4873, or cotton cloth, G50316, from the end of the uplock spring [32].

(e) It is not necessary to perform a landing gear retraction test if the uplock spring [32] is replaced per the above procedure.

SUBTASK 32-32-31-020-018

(4) Remove the spools [37].

(a) Remove the pin [35], nut [33], and washers [36] from the pin [41].

(b) Remove the pins [41].

1) Make sure that you catch the spacers [39], spacers [40], washers [36], washers [38], sleeves [34], and spools [37] that come loose when the pins [41] are removed.

SUBTASK 32-32-31-420-023

(5) Replace the uplock springs [32] and spools [37].

(a) Lubricate the chrome surfaces of the pin [41] with grease, D00013, or grease, D00633.

(b) Put one of the washers [36], one sleeve [34], and one spool [37] on each pin [41].

(c) Install one of the washer [38] and one spacer [39] or spacer [40] on each pin [41].

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(d) Push the pins [41] completely through the uplock hook assembly [42] and link assembly [43] such that you can install the second spacer [39] or spacer [40] and washer [38].

(e) Install the spools [37], sleeves [34], washers [36], and nuts [33] on the pins [41].

(f) Tighten the nuts [33] to 100 in-lb (11 N·m).

(g) Tighten the nuts [33] to the nearest castellation and install the pins [35].

CAUTION

DO NOT USE METAL TOOLS. METAL TOOLS CAN CAUSE DAMAGE TO THE PART YOU WILL DO WORK ON OR ADJACENT PARTS.

(h) With one end of the uplock spring [32] on one spool [37], put a 0.5 inch (12.7 mm) diameter rope, STD-4873, or cotton cloth, G50316, around the other end of the uplock spring [32].

(i) Pull the free spring end over the other spool [37] (approximately) 30 lbf (133 N) per 1.0 in. (25.4 mm) of spring extension is required).

(j) Remove the 0.5 inch (12.7 mm) diameter rope, STD-4873, or cotton cloth, G50316, from the end of the uplock spring [32].

SUBTASK 32-32-31-420-029

(6) If only the uplock spring [32] or spool [37] is replaced, it is not necessary to perform a landing gear retraction test if the spring is replaced per this procedure.

I. Installation Test for the Main Gear Uplock Assembly

SUBTASK 32-32-31-580-002

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE APPLICABLE LANDING GEAR. THE LANDING GEAR EXTENDS AND RETRACTS QUICKLY. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-32-31-020-014

(2) Disconnect the main gear door rod actuator [29] from the main gear doors [28], by removing the pin [27], nut [26], washer [25], washer [23], spacer [24], and bolt [22].

NOTE: The main gear doors will remain hanging during the installation test.

SUBTASK 32-32-31-080-001

(3) Remove the downlock pin only from the main gear you are working on and leave the pin in the other main gear and the nose gear (TASK 32-00-01-080-801).

SUBTASK 32-32-31-860-002

(4) Pressurize the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

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SUBTASK 32-32-31-870-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR BEFORE YOU MOVE THE CONTROL LEVER. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Extend and retract the main landing gear you are working on several times.

NOTE: It will bleed the air from the uplock actuator and the lines. Examine for the correct gear operation.

SUBTASK 32-32-31-040-001

(6) Retract the main landing gear you are working on:

NOTE: The main gear doors will remain hanging during the installation test.

(a) Move the landing gear lever to the OFF position.

NOTE: This will depressurize the landing gear system while personnel are in the wheel well.

(b) Install a DO NOT OPERATE tag, STD-858, on the landing gear handle.

SUBTASK 32-32-31-200-001

> **WARNING** MAKE SURE THAT THE LANDING GEAR LEVER IS IN THE OFF POSITION BEFORE YOU GO INTO THE WHEEL WELL AREA. ACCIDENTAL MOVEMENT OF THE LANDING GEAR COULD CAUSE INJURY TO PERSONNEL.

(7) Make sure that the gap is 0.375 +0.036 / -0.000 in. (9.52 +0.92 / -0.00 mm) (Figure 402).

(a) Use a 0.375 in. (9.525 mm) diameter pin, or equivalent, inserted between the uplock roller and the back of the uplock assembly hook.

(b) If adjustment is required, extend the landing gear.

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Make sure that the downlock pins are installed in the main landing gear (TASK 32-00-01-480-801).

2) Adjust the length of the hanger assembly [19], plus or minus one half turn, until the gap requirement is met.

a) Loosen the jamnut [20].

b) Adjust the hanger assembly [19] length one half turn longer or shorter.

c) Tighten the jamnut [20] to 250 in-lb (28 N·m) - 200 in-lb (23 N·m).

d) Remove the downlock pin from the gear being worked on only and repeat this step until the gap requirement is met.

e) Install MS20995C32 lockwire, G01048, between the jamnut [20] and hanger assembly [19].

SUBTASK 32-32-31-800-001

(8) Extend the landing gear:

(a) Remove the DO NOT OPERATE tag, STD-858, from the landing gear handle.

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(b) Move the landing gear lever to the DOWN position.

(c) Install the downlock pins in the main landing gear (TASK 32-00-01-480-801).

SUBTASK 32-32-31-420-014

(9) Reconnect the main gear door rod actuator [29] to the main gear doors [28], by installing the spacer [24], washer [23], washer [25], bolt [22], nut [26], and pin [27].

SUBTASK 32-32-31-420-015

(10) Make sure that the main gear door is adjusted (TASK 32-13-21-000-801).

SUBTASK 32-32-31-210-001

(11) Examine the hydraulic connections for leaks.

SUBTASK 32-32-31-860-003

(12) Remove power to hydraulic system A (TASK 29-11-00-860-805).

SUBTASK 32-32-31-580-003

(13) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-32-31-840-001

(14) Examine the hydraulic reservoirs for the correct servicing (TASK 12-12-00-610-801).

(a) Do a servicing if it is necessary.

END OF TASK

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MAIN LANDING GEAR UPLOCK ASSEMBLY - INSPECTION/CHECK

1. General

A. This task has the data for a dimensional inspection of the uplock assembly for the main landing gear. No procedure is given in this section to get access to permit the inspection. The uplock assembly must be removed to do the inspection. These are the tasks:

- Main Gear Uplock Assembly Removal, TASK 32-32-31-000-801
- Main Gear Uplock Assembly Installation, TASK 32-32-31-400-801

TASK 32-32-31-200-801

2. Main Landing Gear Uplock Assembly Inspection

(Figure 601)

A. General

(1) This procedure gives wear limits and repair data for the main landing gear uplock assembly.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-31-000-801	Main Gear Uplock Assembly Removal (P/B 401)
32-32-31-400-801	Main Gear Uplock Assembly Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1096	Micrometer - Depth, 0-1 inch, Readable to 1/1000 inch
STD-1097	Caliper - Vernier, 0-6 inch, Readable to 1/1000 inch

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Procedure

SUBTASK 32-32-31-480-005

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-31-020-010

(2) To remove parts to get access to the uplock assembly for the main landing gear do the task that follows (Figure 601):

(a) Do this task: Main Gear Uplock Assembly Removal, TASK 32-32-31-000-801.

SUBTASK 32-32-31-020-011

(3) Use these tools to check for wear on the parts of the main landing gear uplock assembly:

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(a) micrometer (0-1 inch, readable to 1/1000 inch), STD-1096

(b) vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097

SUBTASK 32-32-31-020-012

(4) Examine the parts of the uplock assembly for worn areas:

(a) Remove the parts to be checked.

(b) Measure the parts as necessary with a micrometer (0-1 inch, readable to 1/1000 inch), STD-1096 or a vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

(c) Compare the dimensions you measured with the permitted wear dimensions that follow.

(d) If the parts are not in the tolerance, replace or repair the part as required.

Table 601/32-32-31-993-801

NAME OF THE PARTS THAT AR IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE CLEARANCE
#1 BUSHING	I.D.	0.6870 in 17.450 mm	0.6875 in 17.462 mm	in mm	in mm
#1 BUSHING	O.D.	0.6860 in 17.424 mm	0.6865 in 17.437 mm	in mm	
#2 BUSHING	I.D.	0.5005 in 12.713 mm	0.5010 in 12.827 mm	0.5031 in 12.779 mm	0.003 in 0.086 mm
#2 BOLT	O.D.	0.4990 in 12.675 mm	0.4997 in 12.692 mm	0.4976 in 12.639 mm	
#3 BUSHING	I.D.	0.9949 in 25.270 mm	0.9956 in 25.288 mm	in mm	in mm
#3 BUSHING	O.D.	0.9964 in 25.308 mm	0.9970 in 25.324 mm	in mm	
#4 BUSHING	I.D.	0.4375 in 11.112 mm	0.4381 in 11.128 mm	in mm	in mm
#4 BUSHING	O.D.	0.4384 in 11.135 mm	0.4389 in 11.148 mm	in mm	
#5 BUSHING	I.D.	0.3125 in 7.938 mm	0.3130 in 7.950 mm	0.3150 in 8.001 mm	0.003 in 0.076 mm
#5 BOLT	O.D.	0.3115 in 7.912 mm	0.3120 in 7.925 mm	0.3100 in 7.874 mm	

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Table 601/32-32-31-993-801 (Continued)

NAME OF THE PARTS THAT AR IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE CLEARANCE
#6 BUSHING	I.D.	0.4375 in 11.112 mm	0.4382 in 11.130 mm	in mm	in mm
#6 BUSHING	O.D.	0.4365 in 11.087 mm	0.4370 in 11.100 mm	in mm	
#7 BUSHING	I.D.	0.3125 in 7.938 mm	0.3130 in 7.950 mm	0.3150 in 8.001 mm	0.003 in 0.076 mm
#7 BOLT	O.D.	0.3115 in 7.912 mm	0.3120 in 7.925 mm	0.3100 in 7.874 mm	
#8 BUSHING	I.D.	0.8755 in22.238 mm	0.8765 in 22.263 mm	0.8790 in 22.327 mm	0.005 in 0.127 mm
#8 PIN	O.D.	0.8735 in 22.187 mm	0.8740 in 22.200 mm	0.8715 in 22.136 mm	
#9 BUSHING	I.D.	1.0625 in 26.988 mm	1.0632 in 27.005 mm	in mm	in mm
#9 BUSHING	O.D.	1.0640 in 27.026 mm	1.0645 in 27.038 mm	in mm	
#10 BUSHING	I.D.	0.8745 in 22.212 mm	0.8753 in 22.233 mm	0.8780 in 22.301 mm	0.004 in 0.102 mm
#10 PIN	O.D.	0.8735 in 22.187 mm	0.8740 in 22.200 mm	0.8713 in 22.131 mm	
#11 BUSHING	I.D.	0.3750 in 9.525 mm	0.3756 in 9.540 mm	0.3775 in 9.588 mm	0.003 in 0.076 mm
#11 BOLT	O.D.	0.3740 in 9.500 mm	0.3745 in 9.512 mm	0.3726 in 9.464 mm	

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Table 601/32-32-31-993-801 (Continued)

NAME OF THE PARTS THAT AR IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE CLEARANCE
#12 BUSHING	I.D.	0.5000 in 12.700 mm	0.5006 in 12.715 mm	in mm	in mm
#12 BUSHING	O.D.	0.5010 in 12.725 mm	0.5015 in 12.738 mm	in mm	
#13 BUSHING	I.D.	in mm	in mm	in mm	in mm
#13 BOLT	O.D.	0.3740 in 9.500 mm	0.3745 in 9.512 mm	in mm	

SUBTASK 32-32-31-020-013

(5) To install parts on the uplock assembly for the main landing gear do the task that follows:

(a) Do this task: Main Gear Uplock Assembly Installation, TASK 32-32-31-400-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

G68265 S0006575211_V3

Main Landing Gear Uplock Assembly Wear Limits
Figure 601/32-32-31-990-802 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G68311 S0006575212_V2

Main Landing Gear Uplock Assembly Wear Limits
Figure 601/32-32-31-990-802 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A-A

B-B

G68464 S0006575213_V2

Main Landing Gear Uplock Assembly Wear Limits
Figure 601/32-32-31-990-802 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G68471 S0006575214_V2

Main Landing Gear Uplock Assembly Wear Limits
Figure 601/32-32-31-990-802 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR UPLOCK ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the uplock actuator for the main landing gear (referred to as the actuator assy [13])

(2) An installation of the uplock actuator for the main landing gear.

TASK 32-32-41-000-801

2. Main Gear Uplock Actuator Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-32-41-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-41-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-41-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Main Gear Uplock Actuator Removal

SUBTASK 32-32-41-480-004

(1) Put tags on the lines to show their connection locations.

SUBTASK 32-32-41-020-001

(2) Disconnect the hydraulic lines from the actuator assy [13].

SUBTASK 32-32-41-480-002

(3) Install plugs in the hydraulic lines.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-41-020-002

(4) Remove these items to disconnect the rod end of the actuator assy [13]:

(a) Nut [10] and washers [6, 9]

(b) Bolt [8] and washers [2, 9]

(c) Sleeve [3].

SUBTASK 32-32-41-020-003

(5) Remove these items to disconnect the head end of the actuator assy [13]:

(a) Nut [10] and washers [4, 6]

(b) Bolt [1] and washers [2, 4]

(c) Sleeve [3].

SUBTASK 32-32-41-020-004

(6) Remove the actuator assy [13] from the airplane.

SUBTASK 32-32-41-020-005

(7) Do these steps if the replacement actuator assy [13] does not have the union [7] or restrictor [12]:

(a) Remove the union [7] and restrictor [12] from the actuator assy [13].

(b) Remove and discard the packing [5] and packing [11].

(c) Install plugs in the ports on the actuator assy [13].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

F68215 S0006575218_V2

Main Landing Gear Uplock Actuator Installation
Figure 401/32-32-41-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

F69488 S0006575219_V3

Main Landing Gear Uplock Actuator Installation
Figure 401/32-32-41-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-41-400-801

3. Main Gear Uplock Actuator Installation

(Figure 401)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-4896	Adapter Assembly - Uplock, MLG Part #: C32048-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00633	Grease - Aircraft General Purpose	BMS3-33

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Packing	32-32-41-01-030	LOM ALL
7	Union	32-32-41-01-020	LOM ALL
11	Packing	32-32-41-01-035	LOM ALL
12	Restrictor	32-32-41-01-025	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

F. Main Gear Uplock Actuator Installation

SUBTASK 32-32-41-420-001

(1) Do these steps if the replacement actuator assy [13] does not have the union [7] or restrictor [12] installed:

(a) Lubricate these items with hydraulic fluid, D00153:

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1) packing [5], packing [11]
2) union [7], restrictor [12]

(b) Remove the plugs from the ports on the actuator assy [13].

(c) Install the packing [5], packing [11], union [7], and restrictor [12] in the actuator assy [13].

SUBTASK 32-32-41-610-001

(2) Extend the actuator assy [13]. Fill the actuator assy [13] from the two ends with hydraulic fluid, D00153, and then put caps on the union [7] and restrictor [12].

SUBTASK 32-32-41-420-002

(3) Put the actuator assy [13] in its position with the rod end inboard.

SUBTASK 32-32-41-640-001

(4) Lubricate the chrome plated surfaces of the sleeves [3] with grease, D00633.

SUBTASK 32-32-41-420-003

(5) Install these items to connect the head end of the actuator assy [13] to the uplock assembly:

(a) Sleeve [3]

(b) Bolt [1] and washers [2, 4]

(c) Washers [4, 6] and nut [10]

(d) Tighten the nuts [10] to 20 in-lb (2.3 N·m) – 25 in-lb (2.8 N·m) above the run-on torque.

NOTE: Final torque values 60 in-lb (6.8 N·m) – 65 in-lb (7.3 N·m) desirable.

SUBTASK 32-32-41-420-004

(6) Install these items to connect the rod end of the actuator assy [13] to the uplock assembly:

(a) Sleeve [3]

(b) Bolt [8] and washers [2,9]

(c) Washers [9,6] and nut [10]

(d) Tighten the nut [10] to 20 in-lb (2.3 N·m) – 25 in-lb (2.8 N·m) above the run-on torque.

NOTE: Final torque values 60 in-lb (6.8 N·m) – 65 in-lb (7.3 N·m) desirable.

SUBTASK 32-32-41-420-005

(7) Remove the caps from the union [7] and the restrictor [12] and connect the hydraulic lines [14] to the actuator assy [13].

SUBTASK 32-32-41-420-006

(8) Tighten the B-nuts on the hydraulic lines [14] to a value of 140 ±7 in-lb (16 ±1 N·m).

G. Installation Test for the Main Gear Uplock Actuator (Airplane on Jacks)

SUBTASK 32-32-41-580-002

WARNING

REMOVE PERSONS AND EQUIPMENT FROM THE LANDING GEAR PATH. WHEN THE LANDING GEARS RETRACT, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-32-41-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-41-860-007

(3) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-32-41-080-001

(4) For the main landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801

SUBTASK 32-32-41-870-001

WARNING MAKE SURE YOU INSTALL THE DOWN LOCK PINS IN THE NOSE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT IF THE GEAR RETRACTS.

(5) Extend and retract the main landing gear several times.

NOTE: It will bleed the air from the uplock actuator and the lines. Examine for the correct gear operation.

SUBTASK 32-32-41-210-001

(6) Examine the hydraulic connections for leaks.

SUBTASK 32-32-41-480-003

(7) Extend the main landing gear and install the down lock pins. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-41-840-002

(8) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-32-41-860-003

(9) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-41-580-003

(10) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

H. Installation Test for the Main Gear Uplock Actuator (Airplane not on Jacks)

NOTE: This test gives does a check of the uplock actuator with the airplane on the ground, if jacks are not available.

SUBTASK 32-32-41-210-002

(1) Make sure you installed the hydraulic hoses correctly.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-41-860-004

> **WARNING** MAKE SURE YOU INSTALL THE GROUND LOCK ASSEMBLIES IN ALL LANDING GEAR. ACCIDENTAL RETRACTION OF THE LANDING GEAR CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-41-700-001

(3) Use the override trigger to move the landing gear lever from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

SUBTASK 32-32-41-700-004

(4) Move the landing gear lever to the UP position.

SUBTASK 32-32-41-860-006

(5) Rotate the uplock hook to the closed position, using MLG uplock adapter assembly, SPL-4896.

SUBTASK 32-32-41-700-002

(6) Move the landing gear lever to the DN position.

(a) Make sure the uplock hook rotates to the open position.

SUBTASK 32-32-41-210-003

(7) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-32-41-860-005

(8) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-41-210-004

(9) Make sure there are no leaks in the hydraulic connections.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-32-41-200-001

(1) Service the reservoirs if it is necessary, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR DOWNLOCK ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the downlock actuator for the main landing gear (referred to as the actuator assy [1])

(2) An installation of the downlock actuator for the main landing gear.

TASK 32-32-51-000-801

2. Main Gear Downlock Actuator Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-91-000-801	Main Gear Downlock Springs Removal (P/B 401)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-32-51-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801

SUBTASK 32-32-51-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-32-51-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Main Gear Downlock Actuator Removal

SUBTASK 32-32-51-480-004

(1) Put tags on the lines to show their connection locations.

SUBTASK 32-32-51-020-001

(2) Disconnect the hydraulic lines from the actuator assy [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-51-480-002

(3) Install plugs in the hydraulic lines.

SUBTASK 32-32-51-020-002

(4) Remove the downlock springs [6]. To do this, do this task: Main Gear Downlock Springs Removal, TASK 32-32-91-000-801.

SUBTASK 32-32-51-020-003

(5) Remove the rod end pin [5], spacers [4, 10], and washers [11] that attach the rod end of the actuator assy [1] to the side strut assembly.

SUBTASK 32-32-51-020-004

(6) Remove the pin [7], nut [13], special washer [14], washers [15, 16], and head end pin [12] that attach the head end of the actuator assy [1] to the side strut assembly.

SUBTASK 32-32-51-020-005

(7) Remove the actuator assy [1] from the airplane.

SUBTASK 32-32-51-020-006

(8) Do these steps if the replacement downlock actuator assy [1] does not have union [2] installed:

(a) Remove the union [2] from the actuator assy [1].

(b) Remove and discard the packing [3].

(c) Install plugs in the ports on the actuator assy [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Downlock Actuator Installation
Figure 401/32-32-51-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Downlock Actuator Installation
Figure 401/32-32-51-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DOWNLOCK ACTUATOR HEAD END PIN

D

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Main Landing Gear Downlock Actuator Installation
Figure 401/32-32-51-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-51-400-801

3. Main Gear Downlock Actuator Installation

(Figure 401)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-91-400-801	Main Gear Downlock Spring Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00633	Grease - Aircraft General Purpose	BMS3-33

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Union	32-32-51-01-022	LOM ALL
3	Packing	32-32-51-01-024	LOM ALL
7	Pin	32-32-51-01-003	LOM ALL

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Main Gear Downlock Actuator Installation

SUBTASK 32-32-51-420-001

(1) Do these steps if the replacement downlock actuator [1] does not have the unions [2] installed:

(a) Lubricate these items with hydraulic fluid, D00153:

1) packings [3]

2) unions [2].

(b) Remove the plugs from the ports on the downlock actuator [1].

(c) Install the packings [3] and the unions [2] in the downlock actuator [1].

SUBTASK 32-32-51-610-001

(2) Retract the downlock actuator [1] and fill it with hydraulic fluid, D00153. Then put caps on the unions [2].

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SUBTASK 32-32-51-640-001

(3) Apply grease, D00633, to the inside surface of the lug, the head end of the downlock actuator [1] and the head end pin [12].

SUBTASK 32-32-51-420-002

(4) Put the downlock actuator [1] in position with the head end inboard and the ports on the top part of the actuator.

SUBTASK 32-32-51-420-003

(5) Install the head end pin [12], washers [15], washers [16], speical washer [14], and nut [13].

SUBTASK 32-32-51-420-004

(6) Tighten the nut [13] to 15 in-lb (1.7 N·m) - 25 in-lb (2.8 N·m).

SUBTASK 32-32-51-420-005

(7) Loosen the nut [13] to the nearest castellation if it is necessary and install the pin [7].

SUBTASK 32-32-51-640-002

(8) Apply grease, D00633 to the inside surface of the rod end of the downlock actuator [1] and the rod end pin [5].

SUBTASK 32-32-51-420-006

(9) Install the rod end pin [5], spacer [4], spacers [10], and washers [11].

SUBTASK 32-32-51-080-001

(10) Install the downlock springs [6], washers [9], nuts [8], and pins [7]. Do this task: Main Gear Downlock Spring Installation, TASK 32-32-91-400-801.

SUBTASK 32-32-51-080-002

(11) Remove the caps from the unions [2] and connect the hydraulic lines [17] to the downlock actuator [1].

SUBTASK 32-32-51-420-007

(12) Tighten the B-nuts on the hydraulic lines [17] to a value of 140 ±7 in-lb (16 ±1 N·m).

SUBTASK 32-32-51-420-008

(13) Loosen the B-nuts on the hydraulic lines [17] and re-tighten them to 133 in-lb (15 N·m) - 147 in-lb (17 N·m).

F. Installation Test for the Main Gear Downlock Actuator (Airplane on Jacks)

NOTE: This test does a check of the actuator with the airplane lifted on jacks.

SUBTASK 32-32-51-580-002

WARNING MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR PATH. WHEN THE LANDING GEARS RETRACT, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-32-51-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-51-080-003

(3) Remove the downlock pins for the main landing gear. Do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-51-870-001

> **WARNING** MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS IN THE NOSE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE NOSE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Extend and retract the main landing gear several times.

NOTE: It will bleed the air from the downlock actuator and the lines. Examine for the correct gear operation.

SUBTASK 32-32-51-210-001

(5) Examine the hydraulic connections for leaks.

SUBTASK 32-32-51-480-003

(6) Extend the main landing gear and install the downlock pins, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-51-860-003

(7) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-51-580-003

(8) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

G. Installation Test for the Main Gear Downlock Actuator (Airplane not on Jacks)

NOTE: This test gives does a check of the downlock actuator with the airplane on the ground, if jacks are not available.

SUBTASK 32-32-51-210-002

(1) Make sure you installed the hydraulic hoses correctly.

SUBTASK 32-32-51-860-004

> **WARNING** MAKE SURE THAT YOU INSTALL THE GROUND LOCK ASSEMBLIES IN THE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION. IF THE LANDING GEARS RETRACT, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO THE STRUCTURE.

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-51-700-002

(3) Use the override trigger to move the landing gear lever from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

SUBTASK 32-32-51-700-003

(4) Make sure the rod end of the downlock actuator tries to extend when you move the landing gear lever from the OFF position to the UP position.

SUBTASK 32-32-51-700-004

(5) Move the landing gear lever to the DN position.

SUBTASK 32-32-51-210-003

(6) Do a check for leakage with the hydraulic pressure applied.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-51-860-005

(7) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-51-210-004

(8) Make sure there is no leaks in the hydraulic connections.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-32-51-200-001

(1) Service the reservoirs if it is necessary, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR FRANGIBLE FITTING ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these four tasks:

NOTE: You only have to replace the entire assembly if the entire assembly is damaged. If only the frangible fitting is broken you can replace it alone.

(1) A removal of the frangible fitting assembly [1] for the main landing gear

(2) An installation of the frangible fitting assembly [1] for the main landing gear.

(3) A removal of the frangible fitting [8] for the main landing gear

(4) An installation of the frangible fitting [8] for the main landing gear.

NOTE: You may change the frangible fitting alone only if the assembly is not damaged.

TASK 32-32-52-000-801

2. Main Gear Frangible Fitting Assembly Removal

(Figure 401, Figure 402)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-32-52-480-001

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-52-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-32-52-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Removal of the Frangible Fitting Assembly

SUBTASK 32-32-52-020-003

(1) Disconnect the hydraulic line [6] from the frangible fitting assembly [1].

SUBTASK 32-32-52-480-002

(2) Install a cap on the hydraulic line [6].

SUBTASK 32-32-52-010-001

(3) If necessary, remove the local baffle [19]:

(a) Remove the bolts [20] and washers [21] that attach the local baffle [19] to the wheel well panel.

(b) Scrape carefully to remove the fillet seal of sealant in between the local baffle and the adjacent wheel well panel.

SUBTASK 32-32-52-020-004

(4) If necessary, remove the union [5] from the frangible fitting assembly [1] and discard the packing [4].

(a) Install a plug in the port on the frangible fitting assembly [1].

SUBTASK 32-32-52-020-010

(5) If necessary, remove the nut [7] and frangible fitting [8].

SUBTASK 32-32-52-020-011

(6) If necessary, remove the union [11] and discard the packing [10].

(a) Install a plug in the port on the frangible fitting assembly [1].

SUBTASK 32-32-52-020-006

(7) Remove the bolts [3] and washers [2] that attach the frangible fitting assembly [1] to the structure.

SUBTASK 32-32-52-020-007

(8) Remove the frangible fitting assembly [1] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

2474999 S0000580633_V1

Main Gear Frangible Fitting Assembly
Figure 401/32-32-52-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Gear Frangible Fitting Assembly
Figure 401/32-32-52-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

G57737 S0006575231_V3

Main Gear Frangible Fitting Assembly
Figure 402/32-32-52-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

HYDRAULIC CONNECTION TO FRANGIBLE FITTING ASSEMBLY

C

G57750 S0006575232_V3

Main Gear Frangible Fitting Assembly
Figure 402/32-32-52-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FRANGIBLE FITTING REPLACEMENT

D

LOCAL BAFFLE

E

2474642 S0000579720_V1

Main Gear Frangible Fitting Assembly
Figure 402/32-32-52-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-52-400-802

3. **Main Gear Frangible Fitting Assembly Installation**

(Figure 401, Figure 402)

A. **References**

Reference	Title
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. **Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

C. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Packing	32-32-52-02-040	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
		32-32-52-02A-055	LOM 465-999
5	Union	32-32-52-02-035	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
		32-32-52-02A-050	LOM 465-999
10	Packing	32-32-52-02-040	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
		32-32-52-02A-040	LOM 465-999
11	Union	32-32-52-02-035	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
		32-32-52-02A-030	LOM 465-999

D. **Location Zones**

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Frangible Fitting Assembly Installation

SUBTASK 32-32-52-420-007

(1) If removed, lubricate these items with hydraulic fluid, D00153:

(a) packing (new) [4], union [5].

(b) packing (new) [10], union [11].

SUBTASK 32-32-52-420-008

(2) Put the frangible fitting assembly [1] in its position in the structure.

SUBTASK 32-32-52-420-009

(3) Install the bolts [3] and washers [2].

SUBTASK 32-32-52-390-002

(4) Fay surface seal the frangible fitting assembly [1] with sealant, A00247.

SUBTASK 32-32-52-080-003

(5) Remove the plugs from the ports on the frangible fitting assembly [1].

SUBTASK 32-32-52-420-010

(6) If removed, install the union [5] and packing [4] in the frangible fitting assembly [1].

(a) Tighten the union [5] to 215 ± 10.8 pound-inches (24.3 ± 1.2 newton-meters).

SUBTASK 32-32-52-420-014

(7) If removed, install the union [11] and packing [10] in the frangible fitting assembly [1].

(a) Tighten the union [11] to 215 ± 10.8 pound-inches (24.3 ± 1.2 newton-meters).

SUBTASK 32-32-52-420-015

(8) If removed, install the frangible fitting [8] and the nut [7].

(a) Tighten the nut [7] on the frangible fitting [8] to 270± 13.5 pound-inches (30.5 ± 1.5 newton-meters).

SUBTASK 32-32-52-080-004

(9) Remove the cap from the hydraulic line [6].

SUBTASK 32-32-52-420-016

(10) Connect the hydraulic line [6] to the union [5].

SUBTASK 32-32-52-420-017

(11) Tighten the B-nut on the hydraulic line [6] to a value of 270 ±14 in-lb (31 ±2 N·m).

SUBTASK 32-32-52-480-005

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(12) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-52-860-004

(13) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-52-700-003

(14) Use the override trigger to move the landing gear lever from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

SUBTASK 32-32-52-700-004

(15) Move the landing gear lever to the DN position.

SUBTASK 32-32-52-210-003

(16) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-32-52-860-005

(17) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-52-210-004

(18) Make sure there are no leaks in the hydraulic connections.

SUBTASK 32-32-52-410-001

(19) If removed, put the local baffle [19] in its position on the wheel well panel.

(a) Install the bolts [20] and washers [21].

(b) Use sealant, A00247 to apply a fillet seal in the underside gap between the local baffle and the adjacent wheel well panel.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-32-52-200-002

(1) Service the reservoirs if it is necessary, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

TASK 32-32-52-000-802

4. Main Gear Frangible Fitting Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Prepare for the Removal

SUBTASK 32-32-52-480-006

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-52-860-006

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-32-52-580-002

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Removal of the Frangible Fitting

NOTE: Inspect the entire Frangible Fitting Assembly for damage. If the assembly is damaged, you must replace the entire assembly, not just the fitting.

SUBTASK 32-32-52-020-008

(1) Disconnect the nut [7] from the frangible fitting assembly [1].

SUBTASK 32-32-52-020-009

(2) Remove the frangible fitting [8] from the frangible fitting assembly [1].

SUBTASK 32-32-52-480-007

(3) Install a plug in the port on the frangible fitting assembly [1].

——— END OF TASK ———

TASK 32-32-52-400-803

5. Main Gear Frangible Fitting Installation

(Figure 401)

A. References

Reference	Title
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Frangible Fitting Installation

SUBTASK 32-32-52-080-005

(1) Remove the plug from the port on the frangible fitting assembly [1].

SUBTASK 32-32-52-420-011

(2) Put the frangible fitting [8] in to the frangible fitting assembly [1].

SUBTASK 32-32-52-420-012

(3) Install the nut [7].

SUBTASK 32-32-52-420-013

(4) Tighten the nut [7] on the frangible fitting [8] to 270 ± 13.5 pound-inches (30.5 ± 1.5 newton-meters).

SUBTASK 32-32-52-480-008

WARNING	MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-52-860-007

(6) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-52-700-005

(7) Use the override trigger to move the landing gear lever from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

SUBTASK 32-32-52-700-006

(8) Move the landing gear lever to the DN position.

SUBTASK 32-32-52-210-005

(9) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-32-52-860-008

(10) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-52-210-006

(11) Make sure there are no leaks in the hydraulic connections.

D. Put the Airplane Back to Its Usual Condition

SUBTASK 32-32-52-200-003

(1) Service the reservoirs if it is necessary, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR TRANSFER CYLINDER - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the transfer cylinder assy [1] for the main landing gear

(2) An installation of the transfer cylinder assy [1] for the main landing gear.

TASK 32-32-71-000-801

2. Main Gear Transfer Cylinder Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-32-71-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-71-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-32-71-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Main Gear Transfer Cylinder Removal

SUBTASK 32-32-71-020-001

(1) Disconnect the hydraulic lines from the transfer cylinder assy [1].

SUBTASK 32-32-71-480-002

(2) Install caps on the hydraulic lines and plugs in the transfer cylinder assy [1].

SUBTASK 32-32-71-020-002

(3) Remove the screws [3] and washers [4] from the clamps [2].

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SUBTASK 32-32-71-020-003

(4) Remove the clamps [2].

SUBTASK 32-32-71-020-004

(5) Remove the transfer cylinder assy [1] from the airplane.

SUBTASK 32-32-71-020-005

(6) Do these steps if the replacement transfer cylinder assy [1] does not have the unions [6] installed:

(a) Remove the unions [6] from the transfer cylinder assy [1].

(b) Remove and discard the packing [5].

(c) Install plugs in the ports on the transfer cylinder assy [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Transfer Cylinder Installation
Figure 401/32-32-71-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-71-400-801

3. Main Gear Transfer Cylinder Installation

(Figure 401)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Cylinder assembly	32-32-71-03-040	LOM ALL
5	Packing	32-32-71-01-060	LOM ALL
		32-32-71-03-060	LOM ALL
6	Union	32-32-71-01-055	LOM ALL
		32-32-71-03-055	LOM ALL

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Main Gear Transfer Cylinder Installation

SUBTASK 32-32-71-420-001

(1) Do these steps if the replacement transfer cylinder does not have the unions installed:

(a) Lubricate these items with hydraulic fluid, D00153:

1) packings [5]

2) unions [6].

(b) Remove the plugs from the ports on the transfer cylinder assy [1].

(c) Install the cylinder assy [1] packings [5] and the cylinder assy [1]unions [6] in the transfer.

SUBTASK 32-32-71-610-001

(2) Fill the transfer cylinder assembly [1] from the two ends with hydraulic fluid, D00153 and then put caps on the unions [6].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-71-420-002

(3) Put the transfer cylinder assy [1] in the clamps [2].

SUBTASK 32-32-71-420-003

(4) Adjust the position of the transfer cylinder assy [1] to align it with the hydraulic lines [7].

SUBTASK 32-32-71-080-001

(5) Remove the caps from the cylinder assy [1], unions [6] and connect the hydraulic lines [7] lines to the transfer.

SUBTASK 32-32-71-420-006

(6) Tighten the B-nuts on the hydraulic lines [7] to a value of 270 ±14 in-lb (31 ±2 N·m).

SUBTASK 32-32-71-420-004

(7) Install the screws [3] and washers [4] in the clamps [2].

F. Installation Test For the Main Gear Transfer Cylinder (Airplane on Jacks)

NOTE: This test does a check of the transfer cylinder with the airplane lifted on jacks.

SUBTASK 32-32-71-580-002

WARNING REMOVE PERSONS AND EQUIPMENT FROM THE LANDING GEAR PATH. WHEN THE LANDING GEARS RETRACT, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-32-71-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-71-480-004

WARNING MAKE SURE THE DOWNLOCK PIN IS INSTALLED IN THE NOSE LANDING GEAR. WITHOUT THE DOWNLOCK PIN, THE NOSE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) Keep the downlock pin installed in the nose landing gear if maintenance work is necessary in the nose wheel well area or on the nose landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-71-080-003

(4) Remove the downlock pin for the nose landing gear if no maintenance work is necessary in the nose wheel well area or on the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-32-71-080-002

(5) Remove the downlock pins for the main landing gear. To do this, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-32-71-870-001

(6) Extend and retract the main landing gear several times.

NOTE: It will bleed the air from the transfer cylinder and the lines. Examine for the correct gear operation.

SUBTASK 32-32-71-210-001

(7) Examine the hydraulic connections for leaks.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-71-480-003

(8) Extend the main landing gear and install the downlock pins. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-71-860-003

(9) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-71-580-003

(10) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

G. Installation Test For the Main Gear Transfer Cylinder (Airplane not on Jacks)

NOTE: This test does a check of the transfer cylinder with the airplane on the ground, if jacks are not available.

SUBTASK 32-32-71-860-004

WARNING

MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE LANDING GEARS RETRACT, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO STRUCTURE.

(1) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-71-700-002

(2) Use the override trigger to move the landing gear lever from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

SUBTASK 32-32-71-700-003

(3) Move the landing gear lever to the DN position.

SUBTASK 32-32-71-210-002

(4) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-32-71-860-005

(5) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-71-210-003

(6) Make sure there is no leaks in the hydraulic connections.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-32-71-200-001

(1) Service the reservoirs if it is necessary. To do this, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR HYDRAULIC FLOW REGULATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the hydraulic flow regulator for the main landing gear

(2) An installation of the hydraulic flow regulator for the main landing gear

(a) The installation of the hydraulic flow regulator for the main landing gear includes an installation test of the hydraulic flow regulator.

TASK 32-32-72-000-801

2. Removal of the Hydraulic Flow Regulator for the Main Gear

Figure 401

A. References

Reference	Title
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-32-72-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-72-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

D. Hydraulic Flow Regulator Removal

SUBTASK 32-32-72-020-001

(1) Loosen the hydraulic lines to the hydraulic flow regulator [3].

SUBTASK 32-32-72-020-004

(2) Remove the screw [1] and washer [2] that hold the hydraulic lines to the structure on both ends of the hydraulic flow regulator.

SUBTASK 32-32-72-020-002

(3) Disconnect the hydraulic lines from the hydraulic flow regulator [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-72-480-002

(4) Install caps on the hydraulic lines.

SUBTASK 32-32-72-020-005

(5) Remove the hydraulic flow regulator [3] from the airplane.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Gear Flow Regulator Installation
Figure 401/32-32-72-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-72-400-801

3. Installation of the Hydraulic Flow Regulator for the Main Gear

A. References

Reference	Title
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Hydraulic Flow Regulator Installation

SUBTASK 32-32-72-420-001

(1) Put the hydraulic flow regulator [3] in position to align it with the hydraulic lines.

SUBTASK 32-32-72-080-001

(2) Remove the caps from the hydraulic lines and connect the hydraulic lines to the hydraulic flow regulator [3] .

SUBTASK 32-32-72-420-002

(3) Install the screws [1] and washers [2] in the clamps for the hydraulic lines.

SUBTASK 32-32-72-420-003

(4) Tighten the B-nuts on hydraulic line [5] and hydraulic line [6] to a value of 500 ±25 in-lb (56 ±3 N·m).

SUBTASK 32-32-72-420-004

(5) Tighten the B-nuts on hydraulic line [4] and hydraulic line [7] to a value of 270 ±14 in-lb (31 ±2 N·m).

D. Installation Test of the Hydraulic Flow Regulator

SUBTASK 32-32-72-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-72-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-72-700-001

(3) Move the landing gear lever to the UP position, then to the DN position three times to cycle the hydraulic pressure.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the next position. This will bleed the air from the regulator and the lines.

NOTE: Use the override for the landing gear lever lock to allow you to move the control lever for the landing gear from the DN position to the UP position.

(a) Make sure that the UP hose of the retract actuator moves to show that hydraulic pressure is applied when the control lever is moved to the UP position.

(b) Move the control lever to the DN position.

(c) Make sure that the DOWN hose on the retract actuator moves when you move the control lever from the UP position to the DOWN position.

SUBTASK 32-32-72-210-001

(4) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-32-72-860-003

(5) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-72-210-002

(6) Make sure that there are no leaks in the hydraulic connections.

SUBTASK 32-32-72-840-001

(7) Examine the hydraulic reservoirs for the correct servicing (TASK 12-12-00-610-801).

(a) Do the servicing if it is necessary.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR DOWNLOCK SPRINGS - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the downlock spring assy [1] for the main landing gear

(2) An installation of the downlock spring assy [1] for the main landing gear.

TASK 32-32-91-000-801

2. Main Gear Downlock Springs Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1866	Expander Set - Spring, Main Landing Gear and Nose Landing Gear Part #: C32014-29 Supplier: 81205 Opt Part #: C32014-1 Supplier: 81205 Opt Part #: C32014-20 Supplier: 81205

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

D. Prepare for the Removal

SUBTASK 32-32-91-480-001

> **WARNING** MAKE SURE THE DOWN LOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWN LOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the down lock pins are installed in the nose and main landing gear. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-91-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-91-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

E. Main Gear Downlock Springs Removal

SUBTASK 32-32-91-020-001

(1) Remove the pin [3], nut [4], and washer [2] from the outboard attachment end of the downlock spring assy [1].

SUBTASK 32-32-91-480-002

(2) Install the expander set, SPL-1866 on the forward downlock spring assy [1] to release the tension.

SUBTASK 32-32-91-020-002

(3) Remove the pin [3], nut [4], and washer [2] from the inboard attachment end of the forward downlock spring assy [1].

SUBTASK 32-32-91-480-003

(4) Install a plastic cap or tape on the threads on the inboard and outboard pins. This will protect the threads when you remove the forward downlock spring assy [1].

SUBTASK 32-32-91-020-003

(5) Disconnect the inboard and outboard ends of the forward downlock spring assy [1].

SUBTASK 32-32-91-020-004

(6) Install the, expander set, SPL-1866 on the aft downlock spring assy [1] and release the tension.

SUBTASK 32-32-91-020-005

(7) Remove the pin [3], nut [4], and washer [2] from the inboard attachment end of the aft downlock spring assy [1].

SUBTASK 32-32-91-020-006

(8) Slide the two pins forward to disconnect the inboard and outboard ends of the aft downlock spring assy [1].

SUBTASK 32-32-91-020-007

(9) Remove aft downlock spring assy [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

A

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Main Landing Gear Downlock Springs Installation
Figure 401/32-32-91-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Downlock Springs Installation
Figure 401/32-32-91-990-801 (Sheet 2 of 2)

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TASK 32-32-91-400-801

3. Main Gear Downlock Spring Installation

(Figure 401)

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1866	Expander Set - Spring, Main Landing Gear and Nose Landing Gear Part #: C32014-29 Supplier: 81205 Opt Part #: C32014-1 Supplier: 81205 Opt Part #: C32014-20 Supplier: 81205

B. Consumable Materials

Reference	Description	Specification
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Pin	32-32-91-01-025	LOM ALL

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Main Gear Downlock Spring Installation

SUBTASK 32-32-91-600-001

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION

DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(1) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) on the parts for the forward downlock spring assembly [1] that follow:

(a) the threads and thread reliefs of the inboard and outboard attach points

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) washers [2]

(c) nuts [4]

SUBTASK 32-32-91-610-001

(2) Install the expander set, SPL-1866 on the forward downlock spring assembly [1].

SUBTASK 32-32-91-420-001

(3) Put the forward downlock spring assembly [1] in position at the inboard and outboard attach points.

SUBTASK 32-32-91-420-002

(4) Install the washers [2] and nuts [4] on the inboard and outboard attach points for the forward downlock spring assembly [1].

SUBTASK 32-32-91-420-007

(5) Tighten the nuts [4] to 15-25 pound-inches (1.7-2.8 newton-meters).

SUBTASK 32-32-91-420-003

(6) Loosen to the nearest castellation, if it is necessary, and install the pins [3].

SUBTASK 32-32-91-600-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(7) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) on the parts for the aft downlock spring assembly [1] that follow:

(a) the threads and thread reliefs of the inboard and outboard attach points

(b) washers [2]

(c) nuts [4]

SUBTASK 32-32-91-480-005

(8) Install the expander set, SPL-1866 on the aft downlock spring assembly [1] and extend it to attach on the outboard end.

SUBTASK 32-32-91-420-004

(9) Put the aft downlock spring assembly [1] in position at the inboard and outboard attach points.

SUBTASK 32-32-91-420-005

(10) Install the washers [2] and nuts [4] on the inboard and outboard attach points for the aft downlock spring assembly [1].

SUBTASK 32-32-91-420-008

(11) Tighten the nuts [4] to 15-25 pound-inches (1.7-2.8 newton-meters).

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SUBTASK 32-32-91-420-006

(12) Loosen to the nearest castellation, if it is necessary, and install the pins [3].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR BEAM HANGER PIN - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the beam hanger pin for the main landing gear

(2) An installation of the beam hanger pin for the main landing gear.

TASK 32-32-93-000-801

2. Main Gear Beam Hanger Pin Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1870	Hoist - Retract Actuator, Main Landing Gear Part #: C32028-109 Supplier: 81205 Part #: C32028-110 Supplier: 81205 Part #: C32028-111 Supplier: 81205 Opt Part #: C32028-1 Supplier: 81205 Opt Part #: C32028-3 Supplier: 81205 Opt Part #: C32028-56 Supplier: 81205 Opt Part #: C32028-58 Supplier: 81205 Opt Part #: C32028-59 Supplier: 81205

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

D. Access Panels

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Removal

SUBTASK 32-32-93-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-93-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-93-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-32-93-010-001

(4) Open the applicable access panel:

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

F. Main Gear Beam Hanger Pin Removal

SUBTASK 32-32-93-980-001

(1) Use the hoist, SPL-1870 to hold the head end of the retract actuator in position.

SUBTASK 32-32-93-020-001

(2) Remove these parts to disconnect the pin [1] from the structure:

(a) pin [4]

(b) nut [3]

(c) washer [2]

(d) pin [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Beam Hanger Pin Installation
Figure 401/32-32-93-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Beam Hanger Pin Installation
Figure 401/32-32-93-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-32-93-400-801

3. Main Gear Beam Hanger Pin Installation

(Figure 401)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-32-00-710-801	Main Landing Gear Operational Test (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1870	Hoist - Retract Actuator, Main Landing Gear Part #: C32028-109 Supplier: 81205 Part #: C32028-110 Supplier: 81205 Part #: C32028-111 Supplier: 81205 Opt Part #: C32028-1 Supplier: 81205 Opt Part #: C32028-3 Supplier: 81205 Opt Part #: C32028-56 Supplier: 81205 Opt Part #: C32028-58 Supplier: 81205 Opt Part #: C32028-59 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Pin	32-32-93-01-015	LOM ALL
4	Pin	32-32-93-01-010	LOM ALL

E. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Access Panels

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

G. Main Gear Beam Hanger Pin Installation

SUBTASK 32-32-93-100-001

(1) Clean the surfaces of these items:

(a) Attachment fitting on the beam hanger

(b) pin [1]

(c) washer [2]

(d) nut [3].

SUBTASK 32-32-93-600-001

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION

DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(2) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the thread reliefs and threads on the pin [1] and nut [3], and the face of the washer [2].

SUBTASK 32-32-93-640-001

(3) Apply grease, D00633 to the chrome surface on the pin [1].

SUBTASK 32-32-93-420-001

(4) Put the beam hanger in its position in the bracket on the structure.

SUBTASK 32-32-93-420-002

(5) Install these parts that connect the beam hanger to the bracket on the wing structure:

(a) pin [1]

(b) washer [2]

(c) nut [3].

1) Tighten the nut [3] to 250-300 pound-inches (28-34 newton-meters) above the run-on torque.

2) If it is necessary, loosen the nut [3] to align the nearest castellation.

(d) Install the new pin [4].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-32-93-080-001

(6) Remove the hoist, SPL-1870.

SUBTASK 32-32-93-410-001

(7) Close the applicable access panel:

Number	Name/Location
551BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel
651BT	Upper Inboard Fixed Trailing Edge, MLG Actuator Access Panel

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-32-93-580-002

> **WARNING**
> REMOVE PERSONS AND EQUIPMENT FROM THE LANDING GEAR PATH. WHEN THE LANDING GEARS RETRACT, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-32-93-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-32-93-080-002

(3) For the main landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-32-93-870-001

> **WARNING**
> MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE NOSE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT IF THE GEAR RETRACTS.

(4) For the main landing gear, do this task: Main Landing Gear Operational Test, TASK 32-32-00-710-801.

SUBTASK 32-32-93-480-002

(5) For the main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-32-93-860-003

(6) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-32-93-580-003

(7) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-32-93-410-002

(8) Close the applicable access panel:

Number	Name/Location
551DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel
651DB	Lower Inboard Fixed Trailing Edge, Lube Actuator & MLG Beam Outboard Attach Pin Access Panel

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR EXTENSION AND RETRACTION - ADJUSTMENT/TEST

1. General

A. This procedure has these two tasks:

(1) The first task does an extension/retraction test of the nose landing gear after you replaced a component in the extension/retraction system.

(2) The second task does an operational test of the nose landing gear.

B. The times for gear retraction in the operational test depend on the hydraulic flow rate. The retraction times given in this procedure are based on a minimum flow rate of 3 gpm at a hydraulic system pressure of 3000 +/-150 psi. Hydraulic power can be supplied by a hydraulic test bench or the engine driven pumps to give this minimum flow rate.

NOTE: System losses due to pressure drops and overall hydraulic system internal leakage may require a higher flow rate to achieve optimum retraction times. A hydraulic cart with a higher flow rate capacity is necessary to achieve the stated retraction times.

C. For the nose gear, the electric motor driven pump (EMDP) can be used for the component replacement or operational tests since the EMDP provides a hydraulic flow rate of approximately 6 gpm. When you use the EMDP, operate only one landing gear at a time because the lower flow rate of the EMDP causes slower landing gear operation if you operate more than one gear at the same time. Do not use the EMDP to measure extension/retraction times for the nose gear and main gears operated together or the main gears, operated individually or together.

D. The component replacement test is satisfactory in most cases after replacing a landing gear structural or system component. If you are troubleshooting slow landing gear extension, it is recommended to do the operational test.

TASK 32-33-00-710-802

2. Nose Landing Gear Test - Component Replacement

(Figure 501)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
20-40-11-910-801	Static Grounding (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-10-740-801	Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test (P/B 501)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left

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(Continued)

Zone	Area
212	Flight Compartment - Right

C. Prepare for the Test

SUBTASK 32-33-00-480-003

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-00-760-002

(2) Do this task: Static Grounding, TASK 20-40-11-910-801.

SUBTASK 32-33-00-580-003

(3) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-33-00-860-026

(4) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-33-00-860-027

(5) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7

SUBTASK 32-33-00-860-029

(6) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-33-00-080-002

(7) For the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-33-00-860-030

(8) Make sure the control lever for the landing gear is in the DN position.

SUBTASK 32-33-00-860-031

(9) Make sure that all the gear red lights on the P2-3 panel are off.

SUBTASK 32-33-00-860-032

(10) Make sure that all the gear green lights on the P2-3 panel are on.

SUBTASK 32-33-00-710-007

(11) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-00-860-033

WARNING

MAKE SURE THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM IS OPEN BEFORE YOU MOVE THE THRUST LEVERS. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE WEATHER RADAR SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(12) Move the two thrust levers to the full forward position.

D. Test of Normal Extension and Retraction

SUBTASK 32-33-00-710-008

WARNING

MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE NOSE LANDING GEAR. FAST MOVEMENT OF THE NOSE LANDING GEAR CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Operate the override trigger and move the control lever for the landing gear to UP. Make sure the nose gear retracts.

SUBTASK 32-33-00-860-034

(2) Make sure the green light and the red light for the nose landing gear are off.

SUBTASK 32-33-00-860-035

(3) Move the control lever for the landing gear to the OFF position.

SUBTASK 32-33-00-860-036

(4) Make sure the green light and the red light for the nose landing gear are off.

SUBTASK 32-33-00-710-009

(5) Move the control lever to the DN position and make sure the nose gear extends.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-33-00-840-001

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-33-00-860-038

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-33-00-480-004

(3) For the nose landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-00-580-004

(4) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-33-00-070-001

(5) To check the PSEU for stored faults using the self test, do this task: Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test, TASK 32-09-10-740-801.

——— END OF TASK ———

TASK 32-33-00-710-801

3. Operational Test for the Nose Landing Gear

(Figure 501)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
20-40-11-910-801	Static Grounding (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-10-740-801	Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test (P/B 501)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Test

SUBTASK 32-33-00-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-00-760-001

(2) Do this task: Static Grounding, TASK 20-40-11-910-801.

SUBTASK 32-33-00-710-010

(3) Make sure that the shock strut's pressure of the nose landing gear is correct (TASK 12-15-41-610-802).

SUBTASK 32-33-00-580-001

(4) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-33-00-860-001

(5) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-33-00-860-002

(6) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-00-860-004

(7) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-33-00-080-001

(8) For the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-33-00-860-006

(9) Make sure that the control lever for the landing gear is in the DN position.

SUBTASK 32-33-00-860-007

(10) Make sure that all the gear red lights on the P2-3 panel are off.

SUBTASK 32-33-00-860-008

(11) Make sure that all the gear green lights on the P2-3 panel are on.

SUBTASK 32-33-00-710-001

(12) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-00-860-009

WARNING

MAKE SURE THAT THE CIRCUIT BREAKERS FOR THE WEATHER RADAR SYSTEM ARE OPEN BEFORE YOU MOVE THE THRUST LEVERS. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE WEATHER RADAR SYSTEM. IF YOU DO NOT OBEY, THE OPERATION OF THIS SYSTEM CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT AROUND THE NOSE RADOME.

(13) Move the two thrust levers to the full forward position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Do the Test

SUBTASK 32-33-00-710-002

> **WARNING** MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE NOSE LANDING GEAR. FAST MOVEMENT OF THE NOSE LANDING GEAR CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Operate the override trigger and move the control lever for the landing gear to UP. Measure the time for retraction of the nose gear.

NOTE: Measure the nose gear retraction time from the time the control lever is put in the UP position until the red "disagree" light for the nose gear goes off. Use the nose gear red "disagree" light to measure the retraction time.

(a) Make sure that the nose landing gear is up and locked in 9.0 seconds or less.

SUBTASK 32-33-00-860-010

(2) Make sure that the green light and the red light for the nose landing gear are off.

SUBTASK 32-33-00-860-011

(3) Move the control lever for the landing gear to the OFF position.

SUBTASK 32-33-00-860-012

(4) Make sure that the green light and the red light for the nose landing gear are off.

SUBTASK 32-33-00-710-003

(5) Move the control lever to the DN position and measure the time for extension of the nose gear.

NOTE: Measure the nose gear extension time from the time the control lever is put in the DN position until the landing gear green light for the nose gear comes on. Use the nose gear green light to measure the extension time.

(a) Make sure that the nose landing gear is down and locked in 13.0 seconds or less.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-33-00-860-039

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-33-00-860-024

(2) For hydraulic systems A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-00-480-002

(3) For the nose landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-00-610-001

(4) If it is necessary, fill the hydraulic reservoir with hydraulic fluid. To do this, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

SUBTASK 32-33-00-580-002

(5) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-33-00-070-002

(6) To check the Proximity Sensor Electronics Unit (PSEU) for stored faults using the self test, do this task: Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test, TASK 32-09-10-740-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Extension and Retraction Test
Figure 501/32-33-00-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR RETRACT ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the retract actuator [1] for the nose gear.

(2) An installation of the retract actuator [1] for the nose gear.

(a) The installation of the retract actuator [1] for the nose gear includes two installation tests. An installation test with the airplane on jacks or an installation test with the airplane off jacks. You can choose to use either of the installation test methods.

TASK 32-33-11-000-801

2. Nose Gear Retract Actuator Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-33-11-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-11-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-33-11-580-001

(3) Install chocks around the tires of the nose landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Nose Gear Retract Actuator Removal

NOTE: The pin [8] or pin [16] together with pin [11], nut [10], washer [12], bolt [14], castellated nut [13] and washer [9] can replace or be replaced by pin [23] or pin [24] together with nuts [21], washers [20] and washers [19], bolts [18], and retainer [22].

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SUBTASK 32-33-11-020-001

(1) Disconnect the hydraulic UP-hose at the bracket on the retract actuator [1].

SUBTASK 32-33-11-020-002

(2) Disconnect the hydraulic DOWN-hose at the fitting on the retract actuator [1].

SUBTASK 32-33-11-480-002

(3) Install caps on the hydraulic hoses and the fittings on the retract actuator [1].

LOM ALL; AIRPLANES WITH OLD PIN ASSEMBLIES

SUBTASK 32-33-11-020-003

(4) Hold the retract actuator [1] in its position and disconnect the rod end of the retract actuator [1] from the drag brace (Detail B):

(a) Remove the pin [11], the nut [10], the washer [12], and the bolt [14] from the castellated nut [13] and the pin [8].

(b) Remove the castellated nut [13], the washer [9], the pin [8] and the washers [15] from the airplane.

SUBTASK 32-33-11-020-004

(5) Hold the retract actuator [1] in its position and disconnect the head end of the retract actuator [1] from the top fitting (Detail C):

(a) Remove the pin [11], the nut [10], the washer [12], and the bolt [14] from the castellated nut [13] and the pin [16].

(b) Remove the castellated nut [13], the washer [9], the pin [16] and the washers [17] from the airplane.

LOM ALL; AIRPLANES WITH NEW PIN ASSEMBLIES

SUBTASK 32-33-11-020-008

(6) Hold the retract actuator [1] in its position and disconnect the rod end of the retract actuator [1] from the drag brace (Detail B):

(a) Remove the bolts [18], the washers [19], the washers [20], the nuts [21] and the retainer [22] from the pin [23].

(b) Remove the washers [15] and the pin [23] from the airplane.

SUBTASK 32-33-11-020-009

(7) Hold the retract actuator [1] in its position and disconnect the head end of the retract actuator [1] from the top fitting (Detail C):

(a) Remove the bolts [18], the washers [19], the washers [20], the nuts [21], and the retainer [22] from the pin [24].

(b) Remove the washers [17] and the pin [24] from the airplane.

LOM ALL

SUBTASK 32-33-11-020-005

(8) Remove the retract actuator [1] from the airplane.

SUBTASK 32-33-11-020-006

(9) If the replacement retract actuator [1] does not have the tube assembly installed, remove these parts from the retract actuator [1] you removed:

(a) The reducer [2].

(b) The screws [4], the washers [5], and the clamp [3].

(c) The tube assembly [6].

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(d) The elbow fitting [7].

SUBTASK 32-33-11-480-003

(10) Install a plug in the extend port of the retract actuator [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Retract Actuator Installation
Figure 401/32-33-11-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 IF INSTALLED

F84023 S0006575263_V3

Nose Gear Retract Actuator Installation
Figure 401/32-33-11-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F84027 S0006575264_V3

Nose Gear Retract Actuator Installation
Figure 401/32-33-11-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2090430 S0000440997_V3

Nose Gear Retract Actuator Installation
Figure 401/32-33-11-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2090508 S0000440998_V3

Nose Gear Retract Actuator Installation
Figure 401/32-33-11-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-11-400-801

3. Nose Gear Retract Actuator Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Retract actuator	32-33-11-01-036	LOM ALL
11	Pin	32-33-11-01-017	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Nose Gear Retract Actuator Installation

NOTE: The pin [8] or pin [16] together with pin [11], nut [10], washer [12], bolt [14], castellated nut [13] and washer [9] can replace or be replaced by pin [23] or pin [24] together with nuts [21], washers [20] and washers [19], bolts [18], and retainer [22].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-11-080-001

(1) Remove the plugs from the port and the fitting on the retract actuator [1].

SUBTASK 32-33-11-020-007

(2) If the replacement retract actuator [1] does not have the tube assembly [6] installed, install these parts from the retract actuator [1] you removed:

(a) The elbow fitting [7].

(b) The tube assembly [6].

(c) The screws [4], washers [5], and clamp [3].

(d) The reducer [2].

SUBTASK 32-33-11-980-001

(3) Make sure that the retract actuator [1] is in the retracted position.

SUBTASK 32-33-11-610-001

(4) Make sure that the retract actuator [1] is full of hydraulic fluid, D00153.

(a) Put a cap on the hydraulic fitting on the retract actuator [1] where the DOWN-hose will attach.

(b) Put a cap on the fitting on the retract actuator [1] where the UP-hose will attach.

SUBTASK 32-33-11-600-001

(5) Prepare the retract actuator [1] for installation on the top fitting:

LOM ALL; AIRPLANES WITH OLD PIN ASSEMBLIES

(a) Apply grease, D00633, or grease, D00013, to the bushings of the retract actuator [1] and the shaft of the pin [16].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(b) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the threads and thread reliefs of the castellated nut [13] and to the faces of the washer [9].

LOM ALL; AIRPLANES WITH NEW PIN ASSEMBLIES

(c) Apply grease, D00633, or grease, D00013, to the bushings of the retract actuator [1] and the shaft of the pin [24].

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LOM ALL; AIRPLANES WITH OLD PIN ASSEMBLIES

SUBTASK 32-33-11-420-014

(6) Hold the retract actuator [1] in its position and do these steps to connect the head end of the retract actuator [1] to the top fitting (View C, Figure 401):

(a) Install the pin [16] and washers [17].

NOTE: The head end of pin must be on the same side as the hydraulic hoses to prevent physical interference.

LOM 420, 422-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416 POST SB 737-53-1277

1) If it is necessary, trim the washers [17] around the entire circumference to prevent part interference with the angle bracket.

NOTE: This step is optional.

LOM ALL; AIRPLANES WITH OLD PIN ASSEMBLIES

(b) Install the washer [9] and castellated nut [13] on the pin [16].

(c) Tighten the castellated nut [13] to 50 ft-lb (67.8 N·m) - 58 ft-lb (78.6 N·m).

(d) Loosen the castellated nut [13] to the nearest castellation and install the bolt [14], washer [12], and nut [10] on the castellated nut [13] and pin [16].

(e) Install the pin [11] on the nut [10] and bolt [14].

(f) Wipe of excess Cor-Ban 27L Compound, G50237, and corrosion inhibiting material, G50136.

LOM ALL; AIRPLANES WITH NEW PIN ASSEMBLIES

SUBTASK 32-33-11-420-005

(7) Hold the retract actuator [1] in its position and do these steps to connect the head end of the retract actuator [1] to the top fitting (View C, Figure 401):

(a) Install the pin [24] and washers [17].

NOTE: The head end of pin must be on the same side as the hydraulic hoses to prevent physical interference.

LOM 420, 422-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416 POST SB 737-53-1277

1) If it is necessary, trim the washers [17] around the entire circumference to prevent part interference with the angle bracket.

NOTE: This step is optional.

LOM ALL; AIRPLANES WITH NEW PIN ASSEMBLIES

(b) Install the retainer [22] with the flat surface touching the retract actuator [1] on the pin [24].

(c) Install the bolts [18], washers [19], washers [20], and nuts [21] on the retainer [22] and pin [24].

LOM ALL

SUBTASK 32-33-11-420-011

(8) Prepare the retract actuator [1] for installation on the drag brace:

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LOM ALL; AIRPLANES WITH OLD PIN ASSEMBLIES

(a) Apply grease, D00633, or grease, D00013, to the bushings of the retract actuator [1] and the shaft of the pin [8].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	REMOVE UNWANTED CORROSION-INHIBITING COMPOUND FROM SURFACES WHICH WILL BE LUBRICATED. IF YOU APPLY CORROSION-INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT CAN OCCUR.

(b) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the threads and thread reliefs of the pin [8] and to the faces of the washers [15].

LOM ALL; AIRPLANES WITH NEW PIN ASSEMBLIES

(c) Apply grease, D00633, or grease, D00013, to the bushings of the retract actuator [1] and the shaft of the pin [23].

LOM ALL; AIRPLANES WITH OLD PIN ASSEMBLIES

SUBTASK 32-33-11-420-015

(9) Hold the retract actuator [1] in its position and do these steps to connect the rod end of the retract actuator [1] to the drag brace (View B, Figure 401):

(a) Install the pin [8] and washers [15].

(b) Install the washer [9] and castellated nut [13] on the pin [8].

(c) Tighten the castellated nut [13] to 50 ft-lb (67.8 N·m) - 58 ft-lb (78.6 N·m).

(d) Loosen the castellated nut [13] to the nearest castellation and install the bolt [14], washer [12], and nut [10] on the castellated nut [13] and pin [8].

(e) Install the pin [11] on the nut [10] and bolt [14].

(f) Wipe of excess Cor-Ban 27L Compound, G50237, and corrosion inhibiting material, G50136.

LOM ALL; AIRPLANES WITH NEW PIN ASSEMBLIES

SUBTASK 32-33-11-420-006

(10) Hold the retract actuator [1] in its position and do these steps to connect the rod end of the retract actuator [1] to the drag brace (View B, Figure 401):

(a) Install the pin [23] and washers [15].

(b) Install the retainer [22] with the flat surface touching the retract actuator [1] on the pin [23].

(c) Install the bolts [18], washers [19], washers [20], and nuts [21] on the retainer [22] and pin [23].

LOM ALL

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SUBTASK 32-33-11-080-002

(11) Remove the caps from the hydraulic hoses.

SUBTASK 32-33-11-420-003

(12) Connect the hydraulic hoses to the retract actuator [1].

(a) Tighten the B-nut on the hydraulic UP-hose to 133 in-lb (15.0 N·m) - 147 in-lb (16.6 N·m).

(b) Tighten the B-nut on the hydraulic DOWN-hose to 256.5 in-lb (29.0 N·m) - 283.5 in-lb (32.0 N·m).

SUBTASK 32-33-11-600-002

(13) Apply grease, D00633, to the lubrication fittings to lubricate these items:

(a) The head end bushings of the retract actuator [1].

(b) The bearing of the attach fitting for the head end.

(c) The rod end bearing of the retract actuator [1].

(d) The bushings of the attach fitting for the rod end.

F. Nose Gear Retract Actuator Installation Test

NOTE: This test gives two methods to do a check of the nose gear retract actuator. Method one is with the airplane lifted on jacks and method two is with the airplane on the ground if jacks are not available.

SUBTASK 32-33-11-700-005

(1) Installation test with the airplane on jacks (method one).

WARNING KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE APPLICABLE LANDING GEAR. THE LANDING GEAR EXTENDS AND RETRACTS QUICKLY. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(a) Lift the airplane for nose gear retraction, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

(b) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Remove the downlock pin for the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

WARNING MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS IN THE MAIN LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE MAIN LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(d) Use the override trigger and move the control lever for the landing gear from the DN position to the UP position and back to DN seven times.

NOTE: It will bleed the air from the retract actuator and the lines. Examine for the correct gear operation.

(e) Examine the hydraulic connections for leaks.

(f) Extend the nose landing gear and install the downlock pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

(g) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

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(h) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

(i) Examine the hydraulic reservoirs for the correct servicing, do this task: (TASK 12-12-00-610-801).

1) Do a servicing if it is necessary.

SUBTASK 32-33-11-700-006

(2) Installation test with the airplane off jacks (method two).

(a) Make sure that you installed the hydraulic hoses correctly.

WARNING	MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(b) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Use the override trigger to move the control lever for the landing gear from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

(d) Make sure that the retract actuator [1] tries to extend when you select the UP position.

(e) Move the control lever for the landing gear to the DN position.

(f) Do a check for leakage with the hydraulic pressure applied.

(g) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(h) Make sure that there are no leaks in the hydraulic connections.

(i) Examine the hydraulic reservoirs for the correct servicing, do this task: (TASK 12-12-00-610-801).

1) Do a servicing if it is necessary.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR LOCK ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the lock actuator [2] for the nose landing gear

(2) An installation of the lock actuator [2] for the nose landing gear.

(a) The installation of the lock actuator [2] for the nose landing gear includes an installation test of the lock actuator [2] for the nose landing gear with the airplane on jacks or off jacks.

TASK 32-33-21-000-801

2. Nose Landing Gear Lock Actuator Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-33-21-480-001

WARNING

MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-21-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-33-21-580-001

(3) Install the chocks around the tires of the nose landing gear (PAGEBLOCK 10-11-05/201).

D. Nose Landing Gear Lock Actuator Removal

SUBTASK 32-33-21-020-001

(1) Disconnect the hydraulic lines from the lock actuator [2].

SUBTASK 32-33-21-480-002

(2) Install the caps on the hydraulic lines.

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SUBTASK 32-33-21-020-002

(3) Remove the bolt [8], washer [9], and nut [10] from the bottom pin [7].

SUBTASK 32-33-21-020-003

(4) Remove the bottom pin [7].

SUBTASK 32-33-21-020-004

(5) Remove the pin [4], nut [3], washer [5], and washer [6] for the top pin [1].

SUBTASK 32-33-21-020-005

(6) Remove the top pin [1].

SUBTASK 32-33-21-020-007

(7) Remove the washers [11].

SUBTASK 32-33-21-020-006

(8) Remove the lock actuator [2].

END OF TASK

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Nose Landing Gear Lock Actuator Installation
Figure 401/32-33-21-990-801 (Sheet 1 of 2)

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Nose Landing Gear Lock Actuator Installation
Figure 401/32-33-21-990-801 (Sheet 2 of 2)

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TASK 32-33-21-400-801

3. Nose Landing Gear Lock Actuator Installation

(Figure 401)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00054	Fluid - Hydraulic Assembly Lubricant - MCS 352B (Formerly Monsanto MCS 352B)	
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Actuator	32-33-21-01-020	LOM ALL
4	Pin	32-33-21-01-016	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

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E. Nose Landing Gear Lock Actuator Installation

SUBTASK 32-33-21-620-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(1) Put a thin layer of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (optional), to these items:

(a) The thread relief and threads of the top pin [1].

(b) The face of the washer [5].

(c) The new pin [4].

SUBTASK 32-33-21-640-001

(2) Apply a layer of grease, D00013, to the top pin [1] and mating surfaces.

(a) Do not apply it to the threads or thread relief.

SUBTASK 32-33-21-420-009

(3) Put the two washers [11] in their positions.

SUBTASK 32-33-21-420-001

(4) Put the lock actuator [2] in its position with the hydraulic boss in the forward direction (Figure 401).

SUBTASK 32-33-21-420-002

(5) Install the top pin [1].

SUBTASK 32-33-21-420-003

(6) Install the nut [3], washer [5], and washer [6].

SUBTASK 32-33-21-210-001

(7) Make sure that the bottom pin [7] and holes in the bottom pin [7] are clean.

SUBTASK 32-33-21-640-002

(8) Apply a thin layer of assembly lubricant MCS 352B fluid, D00054, to these parts:

(a) The bottom pin [7].

(b) Inside the bore of the trunnion on the lock actuator [2].

1) Make sure that the seals in the trunnion of the lock actuator [2] are lubricated and in the correct position.

SUBTASK 32-33-21-420-004

(9) Install the bottom pin [7].

SUBTASK 32-33-21-420-005

(10) Install the bolt [8], washer [9], and nut [10].

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SUBTASK 32-33-21-640-003

(11) Use sealant, A02315, to apply a fillet seal around the area where the bottom pin [7] touches the aft bulkhead nose wheel well.

SUBTASK 32-33-21-080-001

(12) Remove the caps from the hydraulic lines.

SUBTASK 32-33-21-420-006

(13) Connect the hydraulic line [12] and hydraulic line [13] to the lock actuator [2].

SUBTASK 32-33-21-420-010

(14) Tighten the B-nut on the hydraulic line [12] to a value of 140 ±7 in-lb (16 ±1 N·m).

SUBTASK 32-33-21-420-011

(15) Tighten the B-nut on hydraulic line [13] to a value of 140 ±7 in-lb (16 ±1 N·m).

SUBTASK 32-33-21-420-007

(16) Tighten the nut [3] to 18 ft-lb (24 N·m) - 24 ft-lb (33 N·m).

SUBTASK 32-33-21-420-008

(17) Install the pin [4].

NOTE: Loosen the nut if it is necessary to align the nut with the hole for the pin.

F. Installation Test for the Lock Actuator Assy

NOTE: This test gives two methods to do a check of the lock actuator. Method one is an installation test with the airplane lifted on jacks and method two is an installation test with the airplane on the ground if jacks are not available. Choose one method to test the lock actuator.

SUBTASK 32-33-21-700-006

(1) Installation test of the lock actuator [2] with the airplane on jacks (method one).

WARNING MAKE SURE THAT YOU STAY AWAY FROM THE NOSE LANDING GEAR WHEN NOT LOCKED IN THE DOWN POSITION. IT CAN ACCIDENTALLY RETRACT. THIS CAN BE A VERY DANGEROUS CONDITION. IF THE NOSE LANDING GEAR RETRACTS, INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

(b) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Remove the downlock pin for the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

WARNING MAKE SURE THAT YOU INSTALL THE GROUND LOCKS IN THE MAIN LANDING GEAR. WITHOUT THE GROUND LOCKS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(d) Extend and retract the nose landing gear several times.

NOTE: It will bleed the air from the actuator and the lines. Examine for the correct gear operation.

(e) Examine the hydraulic connections for leaks.

(f) Extend the nose landing gear and install the downlock pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(g) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(h) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

(i) Examine the hydraulic reservoirs for the correct servicing (TASK 12-12-00-610-801).

1) Do the servicing if it is necessary.

SUBTASK 32-33-21-700-007

(2) Installation test of the lock actuator [2] with the airplane off jacks (method two).

WARNING	MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Use the override trigger to move the landing gear lever from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

(c) Move the landing gear lever to the DN position.

(d) Make sure that the rod end of the lock actuator [2] tries to retract when you move the landing gear lever from the DN position to the OFF position.

(e) Move the landing gear lever to the DN position.

(f) Do a check for leakage with the hydraulic pressure applied.

(g) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(h) Do a servicing of the hydraulic reservoirs if it is necessary, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR LOCK VALVE MANIFOLD - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the lock valve manifold assembly [1] for the nose landing gear

(2) An installation of the lock valvemanifold assembly [1] for the nose landing gear.

TASK 32-33-31-000-801

2. Nose Gear Lock Valve Manifold Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-33-31-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-31-860-001

(2) Remove the pressure from hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-33-31-580-001

(3) Install chocks around the tires of the nose landing gear CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Nose Gear Lock Valve Manifold Removal

SUBTASK 32-33-31-020-001

(1) Disconnect the hydraulic lines from the manifold assembly [1].

SUBTASK 32-33-31-480-002

(2) Install caps on the hydraulic lines.

SUBTASK 32-33-31-020-002

(3) Remove the bolts [2] and washers [3] that hold the manifold assembly [1] on the structure.

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SUBTASK 32-33-31-020-003

(4) Remove the manifold assembly [1] from the airplane.

SUBTASK 32-33-31-020-004

(5) Do these steps if the replacement manifold assembly [1] does not have hydraulic unions [5] installed:

(a) Remove the hydraulic unions [5] from the manifold assembly [1].

(b) Remove and discard the packings [4].

(c) Install plugs in the ports of the manifold assembly [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Landing Gear Valve Manifold Installation
Figure 401/32-33-31-990-801 (Sheet 1 of 2)

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Nose Landing Gear Valve Manifold Installation
Figure 401/32-33-31-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-31-400-801

3. Nose Gear Lock Valve Manifold Installation

(Figure 401)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Manifold assembly	32-33-21-02A-005	LOM ALL
4	Packing	32-33-21-02A-040	LOM ALL
5	Union	32-33-21-02A-035	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Nose Gear Lock Valve Manifold Installation

SUBTASK 32-33-31-420-001

(1) Do these steps if the manifold assembly [1] you will install does not have the hydraulic unions [5] installed:

(a) Lubricate these items with hydraulic fluid, D00153:

1) The packings [4]

2) The hydraulic unions [5].

(b) Remove the plugs from the ports on the manifold assembly [1].

(c) Install the packings [4] and the hydraulic unions [5] in the manifold assembly [1].

SUBTASK 32-33-31-610-001

(2) Fill the manifold assembly [1] with hydraulic fluid, D00153.

NOTE: Put a cap on the hydraulic unions [5].

SUBTASK 32-33-31-420-002

(3) Put the manifold assembly [1] in its position.

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SUBTASK 32-33-31-420-003

(4) Adjust the position of the manifold assembly [1] to align it with the hydraulic lines [6].

SUBTASK 32-33-31-080-001

(5) Remove the caps from the hydraulic unions [5] and connect the hydraulic lines [6] to the manifold assembly [1].

SUBTASK 32-33-31-420-007

(6) Torque the B-nuts on the hydraulic lines [6] to a value of 140 ±7 in-lb (16 ±1 N·m).

SUBTASK 32-33-31-420-004

(7) Install a washer [3] on each bolt [2].

SUBTASK 32-33-31-420-005

(8) Install the bolts [2] and washers [3] that attach the manifold assembly [1] to the structure.

F. Nose Gear Lock Valve Manifold Assy [1] Installation Test (Airplane on Jacks)

NOTE: This test does a check of the manifold assembly [1] with the airplane lifted on jacks.

SUBTASK 32-33-31-580-002

WARNING REMOVE PERSONS AND EQUIPMENT FROM THE NOSE GEAR PATH. WHEN THE NOSE GEARS RETRACT, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Lift the airplane for nose gear retraction, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-33-31-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-31-080-002

(3) Remove the downlock pin for the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-33-31-870-001

WARNING MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE MAIN LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT IF THE GEAR RETRACTS.

(4) Extend and retract the nose landing gear several times.

NOTE: This will bleed the air from the manifold assembly [1] and the lines. Look for the correct gear operation.

SUBTASK 32-33-31-210-001

(5) Examine the hydraulic connections for leaks.

SUBTASK 32-33-31-480-003

(6) Extend the nose landing gear and install the downlock pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-31-860-003

(7) Remove the power from hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-31-580-003

(8) Lower the airplane and remove the jacks, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

G. Nose Gear Lock Valve Manifold Assy [1] Installation Test (Airplane not on Jacks)

NOTE: This test gives does a check of the manifold assembly [1] with the airplane on the ground, if jacks are not available.

SUBTASK 32-33-31-860-004

WARNING	MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE LANDING GEARS RETRACT, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO STRUCTURE.

(1) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-31-700-001

(2) Use the override trigger to move the landing gear lever from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

SUBTASK 32-33-31-700-002

(3) Move the landing gear lever to the DN position.

SUBTASK 32-33-31-700-003

(4) Make sure the rod end of the lock actuator tries to retract when you move the landing gear lever from the DN position to the OFF position.

SUBTASK 32-33-31-700-004

(5) Move the landing gear lever to the DN position.

SUBTASK 32-33-31-210-002

(6) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-33-31-860-005

(7) Remove the power from hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-33-31-210-003

(8) Make sure there is no leaks in the hydraulic connections.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-33-31-200-001

(1) Service the reservoirs if it is necessary, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR TRANSFER CYLINDER - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the transfer cylinder (referred to as the transfer cylinder assembly) for the nose landing gear

(2) An installation of the transfer cylinder assembly for the nose landing gear.

TASK 32-33-41-000-801

2. Nose Gear Transfer Cylinder Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-33-41-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-41-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-33-41-580-001

(3) Install chocks around the tires of the nose landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Nose Gear Transfer Cylinder Removal

SUBTASK 32-33-41-020-001

(1) Disconnect the hydraulic lines from the transfer cylinder assembly [1].

SUBTASK 32-33-41-480-002

(2) Install caps on the hydraulic lines and plugs in the ports on the transfer cylinder assembly [1].

SUBTASK 32-33-41-020-002

(3) Remove the screws [3] and washers [4] from the clamp [2].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-41-020-003

(4) Remove the clamp [2].

SUBTASK 32-33-41-020-004

(5) Remove the transfer cylinder assembly [1] from the airplane.

SUBTASK 32-33-41-020-005

(6) Do these steps if the transfer cylinder assembly [1] does not have unions [6] installed:

(a) Remove the unions [6] from the transfer cylinder assembly [1].

(b) Remove and discard the packings [5].

(c) Install plugs in the ports of the transfer cylinder assembly [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Transfer Cylinder Installation
Figure 401/32-33-41-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-41-400-801

3. Nose Gear Transfer Cylinder Installation

(Figure 401)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Transfer cylinder assembly	32-33-41-01-025	LOM ALL
5	Packing	32-33-41-01-035	LOM ALL
6	Union	32-33-41-01-030	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Nose Gear Transfer Cylinder Installation

SUBTASK 32-33-41-420-001

(1) Do these steps if the transfer cylinder assembly [1] does not have the unions [6] installed:

(a) Lubricate these items with hydraulic fluid, D00153:

1) The packings [5]

2) The union [6].

(b) Remove the plugs from the ports of the transfer cylinder assembly [1].

(c) Install the packings [5] and unions [6] in the transfer cylinder assembly [1].

SUBTASK 32-33-41-610-001

(2) Fill the transfer cylinder assembly [1] from the two ends with hydraulic fluid, D00153.

NOTE: Put a cap on the union.

SUBTASK 32-33-41-420-002

(3) Put the transfer cylinder assembly [1] in the clamps [2].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-41-420-003

(4) Adjust the position of the transfer cylinder assembly [1] to align it with the hydraulic lines [7].

SUBTASK 32-33-41-080-001

(5) Remove the caps from the unions [6] and connect the hydraulic line [7] to the transfer cylinder assembly [1].

SUBTASK 32-33-41-420-006

(6) Torque the B-nuts on the hydraulic line [7] to a value of 270 ±14 in-lb (31 ±2 N·m).

SUBTASK 32-33-41-420-004

(7) Install the screws [3] and washers [4] in the clamps [2].

F. Installation Test For the Nose Gear Transfer Cylinder (Airplane on Jacks)

NOTE: This test does a check of the transfer cylinder with the airplane lifted on jacks.

SUBTASK 32-33-41-580-002

WARNING

KEEP ALL PERSONNEL AND EQUIPMENT CLEAR OF THE AREA AROUND THE NOSE GEAR. THE MOVEMENT OF THE NOSE GEAR CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(1) To complete the test with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-33-41-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-41-080-002

(3) Remove the downlock pin for the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

(a) Keep the downlock pin installed in the nose landing gear if maintenance work is necessary in the nose wheel well area or on the nose landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-41-870-003

(4) Extend and retract the nose landing gear several times.

NOTE: This will bleed the air from the transfer cylinder and the lines.

(a) Examine for the correct gear operation.

SUBTASK 32-33-41-210-001

(5) Examine the hydraulic connections for leaks.

SUBTASK 32-33-41-480-003

(6) Extend the nose landing gear and install the downlock pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-41-860-003

(7) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-33-41-580-003

(8) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Installation Test for the Nose Gear Transfer Cylinder (Airplane not on Jacks)

NOTE: This test does a check of the transfer cylinder with the airplane on the ground, if jacks are not available.

SUBTASK 32-33-41-860-004

> **WARNING**
> MAKE SURE THAT YOU INSTALL THE GROUND LOCK ASSEMBLIES IN THE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION. IF THE LANDING GEARS RETRACT, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO THE STRUCTURE.

(1) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-41-700-001

(2) Use the override trigger to move the landing gear lever from the DN position to the UP position for three times.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the subsequent position.

SUBTASK 32-33-41-700-002

(3) Move the landing gear lever to the DN position.

SUBTASK 32-33-41-210-002

(4) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-33-41-860-005

(5) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-33-41-210-003

(6) Make sure there are no leaks in the hydraulic connections.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-33-41-200-001

(1) Examine the hydraulic reservoirs for the correct servicing (TASK 12-12-00-610-801).

(a) Do the servicing if it is necessary.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR LOCK MECHANISM - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these two tasks:

(1) A removal of the lock mechanism (referred to as the link assembly [1], the spring assembly [2], and the link assembly [3]) for the nose landing gear

(2) An installation of the lock mechanism for the nose landing gear.

TASK 32-33-51-000-801

2. Nose Landing Gear Lock Mechanism Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1866	Expander Set - Spring, Main Landing Gear and Nose Landing Gear Part #: C32014-29 Supplier: 81205 Opt Part #: C32014-1 Supplier: 81205 Opt Part #: C32014-20 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Prepare for the Removal

SUBTASK 32-33-51-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-51-580-001

> **WARNING** REMOVE PERSONS AND EQUIPMENT FROM THE NOSE GEAR PATH. WHEN THE NOSE GEARS RETRACT, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-33-51-860-001

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

E. Nose Landing Gear Lock Mechanism Removal

SUBTASK 32-33-51-020-001

(1) Do these steps to disconnect the spring assembly [2] from the aft lock link assembly [3] and the wheel well fitting:

(a) Remove the pins [8], nuts [4], and washers [5] from shaft [6] where the spring assembly [2] are attached to the aft lock link assembly [3] and the wheel well fitting (Detail B).

(b) Use the expander set, SPL-1866 to extend the spring assembly [2].

(c) Remove the pins [8], nuts [9] and washers [5] from the bolts [10] that hold the spring assembly [2] to the forward lock link assembly [1] (Detail D).

(d) Remove the spring assembly [2], bolts [10], washers [11], and sleeves [12] from the forward lock link assembly [1].

(e) Remove the spring assembly [2] from the aft lock link assembly [3].

(f) Install the bolts [10], washers [11], spring assembly [2], and sleeves [12] to attach the spring assembly [2] to the forward lock link assembly [1].

(g) Install the washers [5] and nuts [9], but do not tighten it.

SUBTASK 32-33-51-020-002

(2) Remove the pin [18], nut [19], washers [20, 21, 28], and pin [22] to disconnect the rod end of the lock actuator from the aft lock link assembly [3] (Detail C).

SUBTASK 32-33-51-020-003

(3) Remove the pin [29], nut [28], washer [27] and bolt [25] from the pin [23] that connects the forward lock link assembly [1] to the drag strut (Detail F).

SUBTASK 32-33-51-020-004

(4) Remove the nut [26], washer [24], and pin [23] to disconnect the forward lock link assembly [1] from the drag strut.

SUBTASK 32-33-51-020-005

(5) Do the steps that follow to remove the lock sensor [14] from the aft lock link assembly [3] (Detail E):

(a) Remove the screws [17] from the clamps that attach the wire bundle to the aft lock link assembly [3].

(b) Remove the nuts [13], washers [15], and screws [16] from the lock sensor [14].

(c) Remove the lock sensor [14] from the aft lock link assembly [3].

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SUBTASK 32-33-51-020-006

(6) Remove the bushing [7] and shaft [6] to disconnect the aft lock link assembly [3] from the wheel well fitting (Detail C).

SUBTASK 32-33-51-020-007

(7) Remove the lock mechanism as a complete assembly.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Lock Mechanism Installation
Figure 401/32-33-51-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Lock Mechanism Installation
Figure 401/32-33-51-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Lock Mechanism Installation
Figure 401/32-33-51-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Lock Mechanism Installation
Figure 401/32-33-51-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-51-400-801

3. Nose Gear Lock Mechanism Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-61-41-400-801	Nose Landing Gear Lock Sensor Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1866	Expander Set - Spring, Main Landing Gear and Nose Landing Gear Part #: C32014-29 Supplier: 81205 Opt Part #: C32014-1 Supplier: 81205 Opt Part #: C32014-20 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Link assembly	32-33-51-02-120	LOM ALL
2	Spring assembly	32-33-51-02-030	LOM ALL
3	Link assembly	32-33-51-02-155	LOM ALL
8	Pin	32-21-21-02-045	LOM ALL
18	Pin	32-33-21-01-016	LOM ALL
29	Pin	32-21-21-02-075	LOM ALL

E. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Procedure

SUBTASK 32-33-51-420-006

(1) If you replace one of the lock links, you must install or remove the shims on the completed lock mechanism assembly to adjust the overcenter dimension.

NOTE: The overcenter dimension is set on the assembly.

SUBTASK 32-33-51-420-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	REMOVE UNWANTED CORROSION-INHIBITING COMPOUND FROM SURFACES WHICH WILL BE LUBRICATED. IF YOU APPLY CORROSION-INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT CAN OCCUR.

(2) Do the steps that follow to connect the aft lock link assembly [3] to the fitting on the aft wheel well wall (Figure 401, View B, C):

(a) Apply a thin layer of Cor-Ban 27L Compound, G50237 to the threads and thread reliefs of the shaft [6] and the nuts [4].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(b) Apply a thin layer of Cor-Ban 27L Compound, G50237 to the faces of the washers [5].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(c) Apply a thin layer of Cor-Ban 27L Compound, G50237 to the new pins [8].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(d) Move the aft lock link assembly [3] into the fitting.

(e) Install the shaft [6] and bushing [7] to connect the aft lock link assembly [3] to the fitting.

SUBTASK 32-33-51-420-002

(3) Do the steps that follow to connect the forward lock link assembly [1] to the drag strut (Figure 401, View F):

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of Cor-Ban 27L Compound, G50237 to the threads and thread reliefs of the pin [23] and the nut [26], and to the faces of the washer [24].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

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CAUTION	REMOVE UNWANTED CORROSION-INHIBITING COMPOUND FROM SURFACES WHICH WILL BE LUBRICATED. IF YOU APPLY CORROSION-INHIBITING COMPOUND TO JOINTS THAT TURN, FAILURE OF THE LANDING GEAR TO EXTEND OR RETRACT CAN OCCUR.

(b) Apply grease, D00633, to the chrome plate on the pin [23].

(c) Install the pin [23], washer [24], and nut [26].

(d) Torque the nut [26] to 95 in-lb (10.7 N·m) - 115 in-lb (13.0 N·m) above the run-on torque.

1) If it is necessary, loosen the nut [26] to align the nearest castellation with the hole in the pin [23].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(e) Apply a thick layer of Cor-Ban 27L Compound, G50237 to the shank and threads of the bolt [25].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(f) Apply a thin layer of Cor-Ban 27L Compound, G50237, to the threads of the nut [28], the faces of the washer [27], and the new pin [29].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(g) Install the bolt [25], washer [27], and nut [28].

(h) Torque the nut [28] to 18 in-lb (2.0 N·m) – 25 in-lb (2.8 N·m) above the run-on torque.

1) If it is necessary, loosen the nut [28] to align the nearest castellation with the hole in the bolt [25].

(i) Install the new pin [29].

SUBTASK 32-33-51-420-003

(4) Do the steps that follow to connect the aft lock link assembly [3] of the lock mechanism to the rod end of the lock actuator (Figure 401, View C):

(a) Apply grease, D00633, or grease, D00013 (Optional), to the bore of the rod end and aft lock link assembly [3], and the pin [22].

(b) Install the pin [22], washer [20], washer [21], two washers [28], and nut [19].

(c) Torque the nut [19] to 18 ft-lb (24.4 N·m) - 24 ft-lb (32.5 N·m).

1) If it is necessary, loosen the nut [19] to align the nearest castellation with the hole on the pin [22].

(d) Install the new pin [18].

SUBTASK 32-33-51-420-004

(5) Do these steps to connect the spring assembly [2] to the forward lock link assembly [1] and the wheel well fitting (Figure 401, View B, D):

(a) Remove the washers [5] and nuts [9] that attach the spring assembly [2] to the forward lock link assembly [1].

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(b) Remove the spring assembly [2], bolts [10], washers [11], and sleeves [12] from the link assembly [1].

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(c) Apply a thick layer of Cor-Ban 27L Compound, G50237 to the shank and threads of the bolts [10].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(d) Apply a thin layer of Cor-Ban 27L Compound, G50237, to the threads of the nuts [9], the faces of the washers [5] and sleeves [12], and the new pins [8].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(e) Apply grease, D00633, to the chrome plated surfaces of the sleeves [12] and the bolts [10].

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(f) Apply a thin layer of Cor-Ban 27L Compound, G50237 to the threads and thread reliefs of the nuts [4], the faces of the washers [5], and the pins [8].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(g) Apply grease, D00633, to the chrome plated surfaces of the shaft [6].

(h) Use the expander set, SPL-1866 to extend the spring assembly [2].

(i) Connect the spring assembly [2] to the forward lock link assembly [1] (Figure 401, View D):

1) Put the spring assembly [2] in its location at the forward lock link assembly [1].
2) Install the bolts [10], sleeves [12], and the washers [11] to connect the spring assembly [2] to the forward lock link assembly [1].
3) Install the washers [5] and the nuts [9] on the bolts [10].
4) Torque the nuts [9] to 20 in-lb (2.3 N·m) – 24 in-lb (2.7 N·m) above the run-on torque.

> **CAUTION**
> POINT THE PIN DOWN DURING INSTALLATION TO KEEP RISK OF CHAFING DAMAGE TO CONDUIT TO A MINIMUM.

a) Install the new pins [8].

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(j) Connect the spring assembly [2] to the shaft [6] in the wheel well fitting (Figure 401, view B):

1) Install the shaft [6] in the wheel well fitting.

2) Put the spring assembly [2] in its location on the shaft [6].

3) Install the washers [5] and nuts [4] on the shaft [6]

4) Torque the nuts [4] to 20 in-lb (2.3 N·m) – 24 in-lb (2.7 N·m) above the run-on torque.

a) Install the new pins [8].

(k) Remove the expander set, SPL-1866 from spring assembly [2].

SUBTASK 32-33-51-420-005

(6) Do the steps that follow to install the lock sensor [14] on the aft lock link assembly [3] (Figure 401, View E):

(a) Put the lock sensors [14] on the aft lock link assembly [3].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin layer of Cor-Ban 27L Compound, G50237 to the threads and thread reliefs of the screws [16], and the faces of the washers [15].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(c) Install the screws [16], washers [15], and nuts [13] on the lock sensor [14].

(d) Install the screws [17] to attach clamps for the wire bundles to the aft lock link assembly [3].

SUBTASK 32-33-51-700-001

(7) Do a post installation check of the nose gear lock sensors [14] (TASK 32-61-41-400-801).

G. Nose Gear Lock Mechanism Installation Test

SUBTASK 32-33-51-480-003

WARNING	MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE MAIN LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE GEAR RETRACTS, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-51-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-51-580-002

WARNING REMOVE PERSONNEL AND EQUIPMENT FROM THE NOSE GEAR PATH WHEN THE NOSE GEAR RETRACTS. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

(3) Extend and retract the nose landing gear several times.

NOTE: Examine the nose gear and lock mechanism for the correct operation.

H. Put the Airplane Back to its Usual Condition

SUBTASK 32-33-51-480-004

(1) Extend the nose landing gear and install the ground lock assembly, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-51-860-003

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-33-51-580-003

(3) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR LOCK MECHANISM - INSPECTION/CHECK

1. General

A. This task has the data for a dimensional inspection of the lock mechanism for the nose landing gear. No procedure is given in this section to get access to permit the inspection. These are the tasks:

These are the tasks:

Nose Landing Gear Lock Mechanism Removal, TASK 32-33-51-000-801,

Nose Gear Lock Mechanism Installation, TASK 32-33-51-400-801.

TASK 32-33-51-200-801

2. Nose Gear Lock Mechanism Inspection

(Figure 601)

A. General

(1) This procedure gives wear limits and repair data for the nose gear lock mechanism.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-33-51-000-801	Nose Landing Gear Lock Mechanism Removal (P/B 401)
32-33-51-400-801	Nose Gear Lock Mechanism Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1096	Micrometer - Depth, 0-1 inch, Readable to 1/1000 inch
STD-1097	Caliper - Vernier, 0-6 inch, Readable to 1/1000 inch

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Procedure

SUBTASK 32-33-51-480-005

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-51-020-008

(2) To remove parts to get access to the lock mechanism for the nose landing gear do the task that follows (Figure 601):

(a) Do this task: Nose Landing Gear Lock Mechanism Removal, TASK 32-33-51-000-801.

SUBTASK 32-33-51-020-009

(3) Use these tools to check for wear on the parts of the main landing gear axle:

(a) micrometer (0-1 inch, readable to 1/1000 inch), STD-1096

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(b) vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

SUBTASK 32-33-51-020-010

(4) Examine the parts of the lock mechanism for worn areas:

(a) Remove the parts to be checked.

(b) Measure the parts as necessary with a micrometer (0-1 inch, readable to 1/1000 inch), STD-1096 or a vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

(c) Compare the dimensions you measured with the permitted wear dimensions that follow.

(d) If the parts are not in the tolerance, replace or repair the part as required.

Table 601/32-33-51-993-801

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
BUSHING [1]	I.D.	1.7500 in. (44.450 mm)	1.7509 in. (44.473 mm)	N/A	N/A
BUSHING [1]	O.D.	1.7526 in. (44.516 mm)	1.7536 in. (44.541 mm)	N/A	
BUSHING [2]	I.D.	1.5000 in. (38.100 mm)	1.5010 in. (38.125 mm)	1.5040 in. (38.202 mm)	0.003 in. (0.076 mm)
PIN [2]	O.D.	1.4980 in. (38.049 mm)	1.4990 in. (38.075 mm)	1.4960 in. (37.998 mm)	
SLEEVE [3]	I.D.	0.3750 in. (9.525 mm)	0.3755 in. (9.538 mm)	0.3775 in. (9.589 mm)	0.002 in. (0.051 mm)
BOLT [3]	O.D.	0.3740 in. (9.500 mm)	0.3745 in. (9.512 mm)	0.3725 in. (9.462 mm)	
BUSHING [4]	I.D.	0.3750 in. (9.525 mm)	0.3755 in. (9.538 mm)	0.3775 in. (9.589 mm)	0.002 in. (0.051 mm)
BOLT [4]	O.D.	0.3740 in. (9.500 mm)	0.3745 in. (9.512 mm)	0.3725 in. (9.462 mm)	
BUSHING [5]	I.D.	0.5000 in. (12.700 mm)	0.5015 in. (12.738 mm)	0.5035 in. (12.789 mm)	0.002 in. (0.051 mm)
SLEEVE [5]	O.D.	0.4985 in. (12.662 mm)	0.4995 in. (12.687 mm)	0.4975 in. (12.637 mm)	
BUSHING [6]	I.D.	0.7500 in. (19.050 mm)	0.7508 in. (19.070 mm)	0.7540 in. (19.152 mm)	0.003 in. (0.076 mm)

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Table 601/32-33-51-993-801 (Continued)

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
PIN [6]	O.D.	0.7480 in. (18.999 mm)	0.7490 in. (19.025 mm)	0.7458 in. (18.943 mm)	
BUSHING [7]	I.D.	0.7515 in. (19.088 mm)	0.7530 in. (19.126 mm)	0.7570 in. (19.228 mm)	0.004 in. (0.102 mm)
SHAFT [7]	O.D.	0.7475 in. (18.987 mm)	0.7490 in. (19.025 mm)	0.7450 in. (18.923 mm)	
BUSHING [8]	I.D.	0.7500 in. (19.050 mm)	0.7505 in. (19.063 mm)	0.7540 in. (19.152 mm)	0.003 in. (0.076 mm)
SHAFT [8]	O.D.	0.7475 in. (18.987 mm)	0.7490 in. (19.025 mm)	0.7455 in. (18.936 mm)	

Table 602/32-33-51-993-802

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC INTERFERENCE
BUSHING [9]	I.D.	0.8750 in. (22.225 mm)	0.8757 in. (22.243 mm)	N/A	N/A
BUSHING [9]	O.D.	0.8765 in. (22.263 mm)	0.8770 in. (22.276 mm)	N/A	
BUSHING [10]	I.D.	0.5000 in. (12.700 mm)	0.5015 in. (12.738 mm)	0.5035 in. (12.789 mm)	0.002 in. (0.051 mm)
SHAFT [10]	O.D.	0.4985 in. (12.662 mm)	0.4995 in. (12.687 mm)	0.4975 in. (12.637 mm)	
BUSHING [11]	I.D.	0.5625 in. (14.288 mm)	0.5630 in. (14.300 mm)	0.5650 in. (14.351 mm)	0.0035 in. (0.089 mm)
PIN [11]	O.D.	0.5610 in. (14.249 mm)	0.5615 in. (14.262 mm)	0.5595 in. (14.211 mm)	
ROD END [12]	I.D.	0.5620 in. (14.275 mm)	0.5630 in. (14.300 mm)	0.5650 in. (14.351 mm)	0.0035 in. (0.089 mm)
PIN [12]	O.D.	0.5610 in. (14.249 mm)	0.5615 in. (14.262 mm)	0.5595 in. (14.211 mm)	

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SUBTASK 32-33-51-020-011

(5) To install parts on the lock mechanism for the nose landing gear do the task that follows:

(a) Do this task: Nose Gear Lock Mechanism Installation, TASK 32-33-51-400-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Lock Mechanism Wear Limits
Figure 601/32-33-51-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A-A

B-B

G71701 S0006575296_V2

Nose Gear Lock Mechanism Wear Limits
Figure 601/32-33-51-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C-C

D-D

G72110 S0006575297_V3

Nose Gear Lock Mechanism Wear Limits
Figure 601/32-33-51-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR LOCK SPRING - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the lock spring (referred to as the spring assembly [6]) for the nose landing gear

(2) An installation of the lock spring for the nose landing gear.

TASK 32-33-52-000-801

2. Nose Gear Lock Spring Removal

(Figure 401)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1866	Expander Set - Spring, Main Landing Gear and Nose Landing Gear Part #: C32014-29 Supplier: 81205 Opt Part #: C32014-1 Supplier: 81205 Opt Part #: C32014-20 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Prepare for the Removal

SUBTASK 32-33-52-480-001

> **WARNING**
> MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON THE NOSE AND MAIN LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-52-860-001

(2) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

E. Nose Gear Lock Spring Removal

SUBTASK 32-33-52-020-001

(1) Remove the pin [1], nut [7], and washer [3] from shaft where the spring assembly [6] is attached to the aft lock link and the wheel well fitting.

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SUBTASK 32-33-52-480-002

(2) Use the expander set, SPL-1866, to extend the spring assembly [6].

SUBTASK 32-33-52-020-002

(3) Remove the pin [1], nut [2] and washer [3] from the bolt [4] that holds the spring assembly [6] to the forward lock link.

SUBTASK 32-33-52-020-003

(4) Remove the spring assembly [6] , bolt [4], washer [5], and sleeve [8].

SUBTASK 32-33-52-020-004

(5) Remove the spring assembly [6].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(LEFT LOCK SPRING IS SHOWN, RIGHT LOCK SPRING IS EQUIVALENT)

A

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Nose Gear Lock Spring Installation
Figure 401/32-33-52-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-52-400-801

3. Nose Gear Lock Spring Installation

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1866	Expander Set - Spring, Main Landing Gear and Nose Landing Gear Part #: C32014-29 Supplier: 81205 Opt Part #: C32014-1 Supplier: 81205 Opt Part #: C32014-20 Supplier: 81205

B. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Pin	32-21-21-02-045	LOM ALL
6	Spring assembly	32-33-51-02-030	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Procedure

SUBTASK 32-33-52-600-001

WARNING USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(1) Apply a thick layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (optional) to the shank and threads of the bolt [4].

(2) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (optional) to the threads of the nut [2], the faces of the washer [5], sleeve [8], and the new pin [1].

SUBTASK 32-33-52-600-002

(3) Apply grease, D00633, to the chrome plated surfaces of the sleeve [8] and the bolt [4].

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SUBTASK 32-33-52-600-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(4) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (optional) to the threads and thread reliefs of the nut [7], the faces of the washer [3], and the new pin [1].

SUBTASK 32-33-52-600-004

(5) Apply grease, D00633, to the chrome plated surface of the shaft on the wheel well fitting.

SUBTASK 32-33-52-480-003

(6) Use the expander set, SPL-1866 to extend the spring assembly [6].

SUBTASK 32-33-52-420-001

(7) Do the steps that follow to connect the spring assembly [6] to the shaft on the wheel well fitting.
   (a) Put the spring assembly [6] in its location on the shaft on the wheel well fitting.
   (b) Install the washer [3] and nut [7] to attach the spring assembly [6] to the wheel well fitting and aft lock link.
      1) Tighten the nut [7] to 20 in-lb (2 N·m) - 24 in-lb (3 N·m) above the run-on torque.
   (c) Install the pin [1].

SUBTASK 32-33-52-420-004

(8) Do the steps that follow to connect the spring assembly [6] to the forward lock link:
   (a) Put the spring assembly [6] in its location on the forward lock link.
   (b) Install bolt [4], washer [5], and the sleeve [8] to connect the spring assembly [6] to the forward lock link.
   (c) Install the washer [3] and nut [2] on the bolt [4].
      1) Tighten the nut [2] to 20 in-lb (2 N·m) - 24 in-lb (3 N·m) above the run-on torque.
   (d) Install the pin [1].

SUBTASK 32-33-52-080-001

(9) Remove the expander set, SPL-1866 from the spring assembly [6].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR WHEEL WELL DOOR LINKAGE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the wheel well door linkage for the nose gear.

(2) An installation of the wheel well door linkage for the nose gear.

B. This linkage, called the door mechanism assembly [1], has these parts:

(1) an upper pushrod assembly [2]

(2) a lower pushrod assembly [3]

(3) and a bellcrank assembly [4].

TASK 32-33-61-000-801

2. Nose Gear Wheel Well Door Linkage Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-33-61-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-61-580-001

(2) Install chocks around the tires of the nose landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Removal

SUBTASK 32-33-61-020-001

(1) Remove the pin [8], nut [7], washer [9], and bolt [5] to disconnect the universal [10] on the lower pushrod assembly [3] from the door hinge (Detail B).

SUBTASK 32-33-61-020-002

(2) Remove the pin [16], nut [14], washer [15], bolt [11], washer [12], and bushing [13] to disconnect the lowerpushrod assembly [3] from the bellcrank assembly [4] (Detail C).

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SUBTASK 32-33-61-020-003

(3) Remove the pin [16], nut [20], washer [21], bolt [19], washer [18], and bushing [17] to disconnect the upper pushrod assembly [2] from the trunnion clevis (Detail D).

SUBTASK 32-33-61-020-004

(4) Remove the pin [16], nut [20], washer [21], bolt [19], washer [18], and bushing [17] to disconnect the upper pushrod assembly [2] from the bellcrank assembly [4] (Detail E).

SUBTASK 32-33-61-020-005

(5) Do these steps to remove the bellcrank assembly [4] (Detail G):

(a) Remove the lockwire from the pin [24] at the inboard end of the door operator bolt [23] and remove the pin [24].

(b) Remove the nut [25] from the door operator bolt [23].

(c) Remove the bellcrank assembly [4] from the door operator bolt [23].

SUBTASK 32-33-61-020-006

(6) Do these steps to remove the door operator bolt [23]:

(a) Remove the aft access panel in the nose gear wheel well from the side on which you will remove the wheel well door linkage.

(b) Remove the nut [26], washer [27], and cross bolt [22] at the outboard end of the door operator bolt [23].

(c) Remove the door operator bolt [23] from the bulkhead fitting.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Wheel Well Door Linkage Installation
Figure 401/32-33-61-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Wheel Well Door Linkage Installation
Figure 401/32-33-61-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Wheel Well Door Linkage Installation
Figure 401/32-33-61-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Wheel Well Door Linkage Installation
Figure 401/32-33-61-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-61-400-801

3. Nose Gear Wheel Well Door Linkage Installation

(Figure 401)

A. References

Reference	Title
32-33-61-820-802	Nose Gear Wheel Well Door Linkage Adjustment and Check (P/B 501)

B. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38
G50347	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Pushrod assembly	32-33-61-01A-040	LOM ALL
3	Pushrod assembly	32-33-61-01A-180	LOM ALL
4	Bellcrank assembly	32-33-61-01A-110	LOM ALL
8	Pin	32-22-11-01A-005	LOM ALL
16	Pin	32-22-11-01A-005	LOM ALL
24	Pin	32-22-11-01A-050	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Installation of the Door Mechanism Assembly for the Nose Gear

SUBTASK 32-33-61-620-001

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(1) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the thread relief and threads of the door operator bolt [23] and the nut [25] (Detail G).

SUBTASK 32-33-61-640-001

(2) Apply a layer of grease, D00633, to the chrome plated surfaces of the door operator bolt [23].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-61-930-001

(3) Put a reference line on the unthreaded end of the door operator bolt [23] to align with the center of the hole for the cross bolt [22].

SUBTASK 32-33-61-420-001

(4) Install the door operator bolt [23] from the inboard side.

NOTE: Make sure the reference line for the center of the bolt is aligned with the bolt hole in the bulkhead fitting.

SUBTASK 32-33-61-600-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(5) Put a thick layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the shank and threads of the cross bolt [22], and on the nut [26] and the face of the washer [27].

SUBTASK 32-33-61-420-002

(6) Align the bolt holes in the door operator bolt [23] and the bulkhead fitting and install the cross bolt [22].

(a) Wipe off the unwanted Cor-Ban 27L Compound, G50237 or corrosion inhibiting material, G50136 from the cross bolt [22] after you install it.

SUBTASK 32-33-61-420-003

(7) Install the washer [27] and nut [26] on the cross bolt [22].

SUBTASK 32-33-61-420-004

(8) Install the bellcrank assembly [4] on the door operator bolt [23].

SUBTASK 32-33-61-420-005

(9) Install the nut [25] and tighten until a gap of at least 0.001 in. (0.025 mm) is measured between the nut [25] and the bushing in the bellcrank assembly [4].

SUBTASK 32-33-61-420-015

(10) Loosen the nut [25] only enough to align the hole in the door operator bolt [23] with the castellations in the nut [25].

SUBTASK 32-33-61-420-006

(11) Install the pin [24] to lock the nut [25].

SUBTASK 32-33-61-410-001

(12) Install MS20995NC32 lockwire, G50347 on the pin [24].

SUBTASK 32-33-61-100-001

(13) Remove the excess Cor-Ban 27L Compound, G50237 or corrosion inhibiting material, G50136 from the bellcrank assembly [4] and the door operator bolt [23] and nut [25].

SUBTASK 32-33-61-420-007

(14) Do these steps to connect the upper pushrod assembly [2] to the bellcrank assembly [4] (Detail E):

(a) Apply grease, D00633 to the chrome plated surfaces of the bolt [19], and the bushing [17].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the threads on the bolt [19], nut [20], and the faces of the washer [18] and washer [21].

(c) Install the bolt [19], washer [18], bushing [17], washer [21], nut [20], and a new pin [16] to connect the upper pushrod assembly [2] to the bellcrank assembly [4].

SUBTASK 32-33-61-420-008

(15) Do these steps to connect the lower pushrod assembly [3] to the bellcrank assembly [4] (Detail C):

(a) Apply grease, D00633 to the chrome plated surfaces of the bolt [11] and the bushing [13].

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the threads on the bolt [11], nut [14], and the faces of the washer [12] and washer [15].

(c) Install the bolt [11], washer [12], bushing [13], washer [15], nut [14], and a new pin [16] to connect the lower pushrod assembly [3] to the bellcrank assembly [4].

SUBTASK 32-33-61-620-002

(16) Do these steps to connect the upper pushrod assembly [2] to the trunnion clevis (Detail D):

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Put a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the threads and thread relief of the bolt [19], nut [20] and on the faces of the washer [18] and washer [21].

(b) Apply a layer of grease, D00633, to the wear surfaces of the bolt [19] and the bushing [17].

(c) Install the bolt [19], washer [18], bushing [17], washer [21] and nut [20] to connect the upper pushrod assembly [2] to the trunnion clevis.

(d) Torque the nut [20] to 90 in-lb (10 N·m) – 125 in-lb (14 N·m).

(e) Loosen the nut [20] only enough to align the hole in the bolt [19] with the castellations in the nut [20].

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(f) Install the new pin [16] in the nut [20].

SUBTASK 32-33-61-820-005

(17) Do the adjustment of the nose gear wheel well door linkage, do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, TASK 32-33-61-820-802.

SUBTASK 32-33-61-420-010

(18) Do these steps to connect the lower pushrod assembly [3] to the door hinge (Detail B):

(a) Apply grease, D00633 to the chrome plated surfaces of the bolt [5].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the threads and thread relief of the bolt [5] and the nut [7] and on the face of the washer [9].

(c) Install the bolt [5], washer [9], nut [7], and a new pin [8] to connect the lower pushrod assembly [3] to the door hinge.

(d) Torque the nut [7] to 60 in-lb (7 N·m) - 90 in-lb (10 N·m).

(e) Loosen the nut [7] only enough to align the hole in the bolt [5] with the castellations in the nut [7].

(f) Install the new pin [8] in the nut [7].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR WHEEL WELL DOOR LINKAGE - ADJUSTMENT/TEST

1. General

A. This procedure includes the instructions to adjust the linkage for the nose gear wheel well doors.

TASK 32-33-61-820-802

2. Nose Gear Wheel Well Door Linkage Adjustment and Check

(Figure 501)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-802	Hydraulic System A or B Pressurization with a Portable Hydraulic Cart (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-35-00-730-801	Nose Gear Manual Extension System Test - Airplane on Jacks (P/B 501)

B. Tools/Equipment

Reference	Description
STD-1184	Scale - Spring, 0-100 Lbs, Tension

C. Consumable Materials

Reference	Description	Specification
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Pin	32-22-11-01A-065	LOM ALL

E. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

F. Prepare for the Adjustment

NOTE: A NLG door rigging check is not necessary if reinstalling the same NLG door that was removed and no changes to the door stops, door seals, door hinges, or door pushrods were made.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-61-480-005

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-61-580-005

(2) Lift the airplane nose until the nose wheel is clear, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

NOTE: Lower the tail support jack as the nose is raised.

SUBTASK 32-33-61-860-008

(3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization with a Portable Hydraulic Cart, TASK 29-11-00-860-802 .

SUBTASK 32-33-61-020-007

(4) Remove the lockwire from the jamnuts on each end of the lower rod assembly.

SUBTASK 32-33-61-020-008

(5) Loosen the jamnut on each end of the lower rod assembly.

NOTE: Loosen the jamnut only if you will turn the lower rod assembly, for adjustment. If you loosen the jamnut too much, it will disengage the rod end lock from the rod barrel.

NOTE: Do not adjust the length of upper rod assembly. Adjustment of the upper rod assembly can cause problems to the gear retraction or extension.

SUBTASK 32-33-61-020-009

(6) If it is not disconnected already, remove these parts to disconnect the universal on the lower rod assembly from the hinges:

(a) pin [4]

(b) nut [3] and washer [2]

(c) bolt [1]

SUBTASK 32-33-61-210-001

(7) Make sure the tamper proof seals are on the upper rod assembly.

G. Adjustment For the Nose Gear Wheel Well Door Linkage

SUBTASK 32-33-61-080-004

(1) Remove the downlock pin from the nose landing gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-33-61-870-003

> **WARNING** MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE MAIN LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE GEAR RETRACTS, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(2) Retract the nose landing gear.

NOTE: Extend and retract the nose landing gear as necessary to do the adjustment.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-61-860-009

(3) Put the control lever for the landing gear to the OFF position.

SUBTASK 32-33-61-600-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(4) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to these items:

(a) The threads and thread reliefs of the bolt [1], the nut [3], and the faces of the washer [2].

SUBTASK 32-33-61-420-013

CAUTION	MAKE SURE THAT THE HEAD OF THE BOLT THAT ATTACHES THE UNIVERSAL JOINT TO THE LOWER ROD ASSEMBLY IS OUTBOARD. IF YOU DO NOT OBEY, THERE WILL NOT BE SUFFICIENT CLEARANCE WITH THE DOOR HINGE AND DAMAGE CAN OCCUR.

(5) Install the bolt [1], washer [2], nut [3], and pin [4] to connect the lower rod assembly to the door hinge.

(a) Adjust the length of the lower rod assembly to permit a free fit of the bolt [1] with no preload on the door.

NOTE: Adjust one door at a time. Make sure the opposite door is disconnected from the lower rod assembly. You will have to disconnect the first door after its adjusted, then do the opposite door adjustment.

SUBTASK 32-33-61-820-004

(6) Shorten the length of the lower rod assembly until the door touches the forward stop fitting.

SUBTASK 32-33-61-700-001

CAUTION	MAKE SURE THE SPRING SCALE IS SECURELY ATTACHED TO THE DOOR. THE SCALE COULD SLIP OFF THE DOOR AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(7) Use the spring scale (0-100 Lbs), STD-1184 to apply a 60 lb (27 kg) - 90 lb (41 kg) down load approximately 1.0 in. (25.4 mm) aft and 1.0 inch outboard of the forward inboard corner of the door or a 75 lb (34 kg) - 95 lb (43 kg) load at the forward stop fitting on the door with the nose landing gear retracted.

(a) Connect the scale to the inside of the landing gear door at the correct location.

(b) Pull down on the scale to apply the correct load.

(c) Keep this load applied while you take the door measurements.

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SUBTASK 32-33-61-820-003

(8) Measure the dimension of the door below the body contour at the forward inboard corner on the door. If the dimension is not 0.14 in. (3.56 mm) - 0.18 in. (4.57 mm), do these steps to adjust the lower rod assembly to get 0.14-0.18 inch:

NOTE: The lower rod assembly is adjustable as a turnbuckle.

(a) Extend the nose gear slowly.

> **CAUTION**
> DO NOT SHORTEN THE LENGTH OF THE LOWER ROD ASSEMBLY MORE THAN 0.50 IN. (12.7 MM) AFTER THE DOOR TOUCHES THE STOP.

(b) Shorten the length of the lower rod assembly one thread at a time.

NOTE: One half turn of the barrel or one turn of the clevis rod end will give one thread of adjustment.

(c) Retract the nose gear and measure the dimension of the door below the body contour.

(d) Do these steps again, if it is necessary, until you get the correct dimension.

SUBTASK 32-33-61-080-003

(9) Remove the weight from the door.

SUBTASK 32-33-61-860-004

(10) Extend the nose landing gear.

SUBTASK 32-33-61-420-011

(11) Tighten the jamnut on each end of the lower rod assembly.

(a) Threads of the rods ends do not need to cover the witness holes. If 10.47 in. (266 mm) is met and threads are visible through the witness holes then adjustment values are reached.

SUBTASK 32-33-61-420-012

(12) Install the lockwire on the jamnuts on each end of the lower rod assembly.

SUBTASK 32-33-61-020-010

(13) Disconnect the door that you adjusted to get access and do the adjustment for the other door.

SUBTASK 32-33-61-420-014

(14) Connect the doors and do the check of door operation.

H. Check of the Door Operation

SUBTASK 32-33-61-860-005

(1) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-61-710-002

> **WARNING**
> MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE MAIN LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE GEAR RETRACTS, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(2) Retract and extend the nose landing gear and look for correct operation of the nose gear doors.

NOTE: Make sure that the landing gear door seals do not interfere with the operation of the doors.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-61-860-006

(3) Extend the nose landing gear.

SUBTASK 32-33-61-730-001

(4) Do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, TASK 32-35-00-730-801.

SUBTASK 32-33-61-480-003

(5) Install the downlock pin from the nose landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-61-580-004

(6) Lower the airplane nose and remove the jacks, do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-33-61-860-007

(7) Remove the power from hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Wheel Well Door Linkage Adjustment
Figure 501/32-33-61-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Wheel Well Door Linkage Adjustment
Figure 501/32-33-61-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR WHEEL WELL DOOR LINKAGE - INSPECTION/CHECK

1. General

A. This task has the data for a dimensional inspection of the linkage for the wheel well doors on the nose landing gear. No procedure is given in this section to get access to permit the inspection. The door linkage must be removed to do the inspection.

These are the tasks:

Nose Gear Wheel Well Door Linkage Removal, TASK 32-33-61-000-801,

Nose Gear Wheel Well Door Linkage Installation, TASK 32-33-61-400-801.

TASK 32-33-61-200-801

2. Nose Gear Wheel Well Door Linkage Inspection

(Figure 601)

A. General

(1) This procedure gives wear limits and repair data for the linkage for the wheel well doors on the nose landing gear.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-33-61-000-801	Nose Gear Wheel Well Door Linkage Removal (P/B 401)
32-33-61-400-801	Nose Gear Wheel Well Door Linkage Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1096	Micrometer - Depth, 0-1 inch, Readable to 1/1000 inch
STD-1097	Caliper - Vernier, 0-6 inch, Readable to 1/1000 inch

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Procedure

SUBTASK 32-33-61-480-004

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-61-020-011

(2) To remove parts to get access to the linkage for the wheel well doors on the nose landing gear do the task that follows (Figure 601):

(a) Do this task: Nose Gear Wheel Well Door Linkage Removal, TASK 32-33-61-000-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-61-020-012

(3) Use these tools to check for wear on the parts of the linkage for the wheel well doors on the nose landing gear:

(a) micrometer (0-1 inch, readable to 1/1000 inch), STD-1096

(b) vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

SUBTASK 32-33-61-020-013

(4) Examine the parts of the linkage for worn areas:

(a) Remove the parts to be checked.

(b) Measure the parts as necessary with a micrometer (0-1 inch, readable to 1/1000 inch), STD-1096 or a vernier caliper (0 - 6 inch, readable to 1/1000 inch), STD-1097.

(c) Compare the dimensions you measured with the permitted wear dimensions that follow.

(d) If the parts are not in the tolerance, replace or repair the part as required.

Table 601/32-33-61-993-801

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#1 BUSHING	I.D.	0.4375 in 11.112 mm	0.4381 in 11.128 mm	0.4405 in 11.189 mm	0.004 in
#1 BOLT	O.D.	0.4355 in 11.062 mm	0.4365 in 11.087 mm	0.4341 in 11.026 mm	0.102 mm
#2 BUSHING	I.D.	0.4375 in 11.112 mm	0.4381 in 11.128 mm	0.4405 in 11.189 mm	0.004 in
#2 BOLT	O.D.	0.4355 in 11.062 mm	0.4365 in 11.087 mm	0.4341 in 11.026 mm	0.102 mm
#3 BEARING	I.D.	in mm	in mm	in mm	in
#3 BOLT	O.D.	0.3740 in 9.500 mm	0.3745 in 9.512 mm	in mm	mm
#4 BUSHING	I.D.	0.3750 in 9.525 mm	0.3755 in 9.538 mm	0.3775 in 9.588 mm	0.003 in
#4 BOLT	O.D.	0.3740 in 9.500 mm	0.3745 in 9.512 mm	0.3725 in 9.462 mm	0.076 mm
#5 BUSHING	I.D.	0.3750 in 9.525 mm	0.3755 in 9.538 mm	0.3775 in 9.588 mm	0.003 in
#5 BOLT	O.D.	0.3740 in 9.500 mm	0.3745 in 9.512 mm	0.3725 in 9.462 mm	0.076 mm

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 601/32-33-61-993-801 (Continued)

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#6 BUSHING	I.D.	0.5625 in 14.288 mm	0.5630 in 14.300 mm	0.5655 in 14.363 mm	0.004 in
#6 BUSHING	O.D.	0.5610 in 14.249 mm	0.5615 in 14.262 mm	0.5590 in 14.199 mm	0.102 mm
#7 BUSHING	I.D.	in mm	in mm	in mm	in
#7 BOLT	O.D.	1.122 in 28.50 mm	1.124 in 28.55 mm	in mm	mm
#8 BEARING	I.D.	in mm	in mm	in mm	in
#8 BOLT	O.D.	0.4990 in 12.675 mm	0.4995 in 12.687 mm	in mm	mm

Table 602/32-33-61-993-802

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#9 BUSHING	I.D.	0.6875 in 17.462 mm	0.6880 in 17.475 mm	0.6905 in 17.539 mm	0.004 in
#9 BUSHING	O.D.	0.6860 in 17.424 mm	0.6865 in 17.437 mm	0.6840 in 17.374 mm	0.102 mm
#10 BUSHING	I.D.	0.5000 in 12.700 mm	0.5005 in 12.713 mm	0.5025 in 12.764 mm	0.003 in
#10 BOLT	O.D.	0.4990 in 12.675 mm	0.4995 in 12.687 mm	0.4975 in 12.636 mm	0.076 mm
#11 BUSHING	I.D.	0.5000 in 12.700 mm	0.5005 in 12.713 mm	0.5025 in 12.764 mm	0.003 in
#11 BOLT	O.D.	0.4990 in 12.675 mm	0.4995 in 12.687 mm	0.4975 in 12.636 mm	0.076 mm

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 602/32-33-61-993-802 (Continued)

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#12 BUSHING	I.D.	0.6875 in 17.462 mm	0.6880 in 17.475 mm	0.6905 in 17.539 mm	0.004 in
#12 BUSHING	O.D.	0.6860 in 17.424 mm	0.6865 in 17.437 mm	0.6840 in 17.374 mm	0.102 mm
#13 BEARING	I.D.	in mm	in mm	in mm	in
#13 BOLT	O.D.	0.4990 in 12.675 mm	0.4995 in 12.687 mm	in mm	mm

SUBTASK 32-33-61-020-014

(5) To install parts on the linkage for the wheel well doors on the nose landing gear do the task that follows:

(a) Do this task: Nose Gear Wheel Well Door Linkage Installation, TASK 32-33-61-400-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G77308 S0006575319_V2

Nose Gear Wheel Well Door Linkage Wear Limits
Figure 601/32-33-61-990-803 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A-A

B-B

G71395 S0006575320_V2

Nose Gear Wheel Well Door Linkage Wear Limits
Figure 601/32-33-61-990-803 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C-C

D-D

G71399 S0006575321_V2

Nose Gear Wheel Well Door Linkage Wear Limits
Figure 601/32-33-61-990-803 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E-E

F-F

G71480 S0006575322_V2

Nose Gear Wheel Well Door Linkage Wear Limits
Figure 601/32-33-61-990-803 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR PRESSURE FUSE - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) A removal of the retract pressure fuse (referred to as the fuse assembly [4]) for the nose landing gear

(2) An installation of the fuse assembly [4] for the nose landing gear

(a) The installation of the fuse assembly [4] for the nose landing gear includes an installation test of the retract pressure fuse.

(3) A removal of the extend pressure fuse for the nose landing gear

(4) An installation of the extend pressure fuse for the nose landing gear

(a) The installation of the extend pressure fuse for the nose landing gear includes an installation test for the extend pressure fuse.

TASK 32-33-71-000-801

2. Removal of the Retract Pressure Fuse for the Nose Gear

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-33-71-480-001

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-71-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-71-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Retract Pressure Fuse Removal

SUBTASK 32-33-71-020-007

(1) Loosen the nuts connecting the hydraulic lines to the fuse assembly [4].

SUBTASK 32-33-71-020-001

(2) Remove the screws [1], washers [2], and nuts [3] that hold the hydraulic lines to the structure on the two ends of the fuse assembly [4].

SUBTASK 32-33-71-020-002

(3) Disconnect the hydraulic lines from the fuse assembly [4].

SUBTASK 32-33-71-480-002

(4) Install caps on the hydraulic lines.

SUBTASK 32-33-71-020-003

(5) Remove the fuse assembly [4] from the airplane.

E. Test the Retract Pressure Hydraulic Fuse

SUBTASK 32-33-71-720-001

(1) Do the functional test of the pressure hydraulic fuse with the supplier's recommended component maintenance test instructions and test equipment.

NOTE: The supplier's instructions give a reverse flow test, internal leakage test, pressure drop test, volumetric capacity test and reset test for the fuse. This is an off-airplane bench test.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Retract Pressure Fuse Installation
Figure 401/32-33-71-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-71-400-801

3. Installation of the Retract Pressure Fuse for the Nose Gear

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Fuse assembly	32-33-71-01-015	LOM 422-434, 437-447, 450-999
		32-33-71-02-025	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

D. Retract Pressure Fuse Installation

SUBTASK 32-33-71-420-001

(1) Put the fuse assembly [4] in position to align it with the hydraulic lines.

SUBTASK 32-33-71-080-001

(2) Remove the caps from the hydraulic lines [26] and connect the hydraulic lines [26] to the fuse assembly [4].

SUBTASK 32-33-71-420-003

(3) Install the screws [1], washers [2], and nuts [3] for the clamps that hold the hydraulic lines to the structure on the two ends of the fuse assembly [4].

SUBTASK 32-33-71-420-007

(4) Tighten the B-nuts of the hydraulic lines [26] to a value of 270 ±14 in-lb (31 ±2 N·m).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Installation Test of the Retract Pressure Fuse

SUBTASK 32-33-71-480-003

> **WARNING** MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE LANDING GEARS RETRACT, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO STRUCTURE.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-71-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-71-700-001

(3) Use the override trigger to move the control lever for the landing gear from the DN position to the UP position.

SUBTASK 32-33-71-710-001

(4) Make sure the UP hose of the retract actuator moves to show that hydraulic pressure is applied when the control lever is moved to the UP position.

SUBTASK 32-33-71-700-002

(5) Move the control lever to the DN position.

SUBTASK 32-33-71-700-003

(6) Make sure the DOWN hose on the retract actuator moves when you move the control lever from the UP position to the DN position.

SUBTASK 32-33-71-210-001

(7) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-33-71-860-003

(8) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-33-71-210-002

(9) Make sure there are no leaks in the hydraulic connections.

SUBTASK 32-33-71-840-001

(10) Examine the hydraulic reservoirs for the correct servicing. To do this, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

(a) Service them if it is necessary.

END OF TASK

TASK 32-33-71-000-803

4. Removal of the Extend Pressure Fuse for the Nose Gear

(Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-33-71-480-004

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-71-860-004

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-33-71-580-002

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Extend Pressure Fuse Removal

SUBTASK 32-33-71-020-009

(1) Loosen the nuts connecting the hydraulic lines [29] to the fuse assembly [25].

SUBTASK 32-33-71-020-010

(2) Disconnect the hydraulic lines [29] from the fuse assembly [25].

SUBTASK 32-33-71-480-005

(3) Install caps on the hydraulic lines [29].

SUBTASK 32-33-71-020-011

(4) Remove the fuse assembly [25] from the airplane.

E. Test the Extend Pressure Fuse

SUBTASK 32-33-71-720-002

(1) Do the functional test of the extend pressure fuse with the supplier's recommended component maintenance test instructions and test equipment.

NOTE: The supplier's instructions give a reverse flow test, internal leakage test, pressure drop test, volumetric capacity test and reset test for the fuse. This is an off-airplane bench test.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Extend Pressure Fuse Installation
Figure 402/32-33-71-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-71-400-802

5. **Installation of the Extend Pressure Fuse for the Nose Gear**
(Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
25	Fuse assembly	29-11-61-05-400	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		29-11-61-07-350	LOM 422-434, 437-447, 450-999

C. **Location Zones**

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

D. **Extend Pressure Fuse Installation**

SUBTASK 32-33-71-420-009

(1) Put the fuse assembly [25] in position to align it with the hydraulic lines.

SUBTASK 32-33-71-080-003

(2) Remove the caps from the hydraulic lines [29] and connect the hydraulic lines [29] to the fuse assembly [25].

SUBTASK 32-33-71-420-012

(3) Tighten the B-nut on the hydraulic line [29] to a value of 270 ±14 in-lb (31 ±2 N·m).

E. **Installation Test of the Extend Pressure Fuse**

SUBTASK 32-33-71-480-006

WARNING MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE LANDING GEARS RETRACT, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO STRUCTURE.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-71-860-005

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-33-71-700-004

(3) Use the override trigger to move the control lever for the landing gear from the DN position to the UP position.

SUBTASK 32-33-71-710-002

(4) Make sure the UP hose of the retract actuator moves to show that hydraulic pressure is applied when the control lever is moved to the UP position.

SUBTASK 32-33-71-700-005

(5) Move the control lever to the DN position.

SUBTASK 32-33-71-700-006

(6) Make sure the DOWN hose on the retract actuator moves when you move the control lever from the UP position to the DN position.

SUBTASK 32-33-71-210-004

(7) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-33-71-210-005

(8) Make sure there are no leaks in the hydraulic connections.

SUBTASK 32-33-71-860-006

(9) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-33-71-840-002

(10) Examine the hydraulic reservoirs for the correct servicing. To do this, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

(a) Service them if it is necessary.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR HYDRAULIC FLOW REGULATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the hydraulic flow regulator for the nose landing gear

(2) An installation of the hydraulic flow regulator for the nose landing gear

(a) The installation of the hydraulic flow regulator for the nose landing gear includes an installation test of the hydraulic flow regulator.

TASK 32-33-72-000-801

2. Removal of the Hydraulic Flow Regulator for the Nose Gear

(Figure 401)

A. References

Reference	Title
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-33-72-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-72-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

D. Hydraulic Flow Regulator Removal

SUBTASK 32-33-72-020-001

(1) Loosen the hydraulic lines to the hydraulic flow regulator [3].

SUBTASK 32-33-72-020-002

(2) Remove the screws [1] and the washers [2] that hold the hydraulic lines to the structure on both ends of the hydraulic flow regulator.

SUBTASK 32-33-72-020-003

(3) Disconnect the hydraulic lines from the hydraulic flow regulator [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-72-480-002

(4) Install caps on the hydraulic lines.

SUBTASK 32-33-72-020-004

(5) Remove the hydraulic flow regulator [3] from the airplane.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Flow Regulator Installation
Figure 401/32-33-72-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-33-72-400-801

3. Installation of the Hydraulic Flow Regulator for the Nose Gear

(Figure 401)

A. References

Reference	Title
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Hydraulic Flow Regulator Installation

SUBTASK 32-33-72-420-001

(1) Put the hydraulic flow regulator [3] in position to align it with the hydraulic lines [4].

SUBTASK 32-33-72-080-001

(2) Remove the caps from the hydraulic lines [4] and connect the hydraulic lines [4] to the hydraulic flow regulator [3].

SUBTASK 32-33-72-420-002

(3) Install the screws [1] and the washers [2] in the clamps for the hydraulic lines.

SUBTASK 32-33-72-420-003

(4) Tighten the B-nuts on the hydraulic lines [4] to a value of 270 ±14 in-lb (31 ±2 N·m).

D. Installation Test of the Hydraulic Flow Regulator

SUBTASK 32-33-72-480-003

WARNING MAKE SURE YOU INSTALL THE DOWNLOCK PINS IN THE LANDING GEAR TO PREVENT THE ACCIDENTAL OPERATION OF THE GEAR. IF THE LANDING GEARS RETRACT, IT CAN CAUSE INJURY TO PERSONS OR DAMAGE TO STRUCTURE.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-33-72-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-33-72-700-001

(3) Move the landing gear lever to the UP position, then to the DOWN position three times to cycle the gear.

NOTE: Hold the lever in each position for three seconds before you move the landing gear lever to the next position. This will bleed the air from the regulator and the lines.

NOTE: Use the override for the landing gear lever lock to allow you to move the control lever for the landing gear from the DN position to the UP position.

(a) Make sure the UP hose of the retract actuator moves to show that hydraulic pressure is applied when the control lever is moved to the UP position.

(b) Move the control lever to the DN position.

(c) Make sure the DOWN hose on the retract actuator moves when you move the control lever from the UP position to the DOWN position.

SUBTASK 32-33-72-210-001

(4) Do a check for leakage with the hydraulic pressure applied.

SUBTASK 32-33-72-860-003

(5) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-33-72-210-002

(6) Make sure there are no leaks in the hydraulic connections.

SUBTASK 32-33-72-840-001

(7) Do a servicing of the hydraulic reservoirs if it is necessary, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR MANUAL EXTENSION SYSTEM - ADJUSTMENT/TEST

1. **General**
   A. This procedure contains scheduled maintenance task data.
   B. This procedure contains these tasks:
      (1) Main landing gear manual extension system adjustment and test.
      (2) System test of the manual extension system for the main gear, with the airplane on jacks.
      (3) System test of the manual extension system for the main gear, with the airplane not on jacks.
      (4) Manual extension system access door switch adjustment.

TASK 32-34-00-820-801

2. **Main Landing Gear Manual Extension System Adjustment and Test**
(Figure 501, Figure 502)

A. General

(1) This task gives the instructions to adjust (rig) the left or right manual extension system for the main landing gears.

NOTE: Control cables may contact fairleads, grommets or rub strips after rigging at operating conditions. Refer to PAGEBLOCK 20-20-31/601 for control cable damage limits.

(2) In this task the rig pin used for the left side main landing gear is LGEA2 and for the right side is LGEA3.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
20-20-31 P/B 601	CONTROL CABLES - INSPECTION/CHECK
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-4896	Adapter Assembly - Uplock, MLG Part #: C32048-1 Supplier: 81205

D. Location Zones

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Adjustment and Test

SUBTASK 32-34-00-860-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-34-00-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-34-00-580-001

(3) Install chocks around the tires of the main landing gear (PAGEBLOCK 10-11-05/201).

SUBTASK 32-34-00-480-001

(4) Install the rig pin LGEA2 (L/H) or LGEA3 (R/H) from rigging pin kit, SPL-1585, in the cable guard bracket and quadrant on the manual extension mechanism.

SUBTASK 32-34-00-010-001

(5) Remove the ceiling panels in the forward cargo compartment that are at approximately body station 420.

F. Main Landing Gear Manual Extension System Adjustment and Test

SUBTASK 32-34-00-020-001

(1) Remove the locking clips from the turnbuckle.

SUBTASK 32-34-00-020-002

(2) Loosen the cable MLGEA at the turnbuckle.

SUBTASK 32-34-00-820-005

(3) Make sure that the uplock link is in the up and locked position with the MLG uplock adapter assembly, SPL-4896, or a suitable tool.

SUBTASK 32-34-00-020-003

(4) Remove the pin [1] and loosen the nut [2] and bolt [3].

SUBTASK 32-34-00-820-002

(5) Loosen the jamnut on the control rod on the manual extension mechanism.

SUBTASK 32-34-00-820-003

(6) Adjust the control rod to get the 0.0625 in. (1.59 mm) to 0.220 in. (5.59 mm) between the kicker arm on the uplock and upper lock link (Figure 502).

SUBTASK 32-34-00-420-001

(7) Tighten the jamnut to 95 in-lb (10.73 N·m) – 160 in-lb (18.08 N·m).

SUBTASK 32-34-00-080-001

(8) Remove the rig pin LGEA2 or LGEA3 from the manual extension mechanism.

SUBTASK 32-34-00-980-001

(9) Put the uplock hook in the down and locked position before performing a gear retraction.

SUBTASK 32-34-00-700-001

(10) Turn the cable quadrant to make sure that the control rod does not rub against the kicker arm on the uplock.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Install the rig pin LGEA2 or LGEA3.

SUBTASK 32-34-00-420-002

(11) Do these steps to tighten the bolt [3] and nut [2] to 80 in-lb (9.04 N·m) plus run on torque to 240 in-lb (27.12 N·m) maximum:

(a) Begin at the lower torque value and increase as necessary to align the castellation in the nut [2] with the hole in the bolt [3].

(b) Do not use more than 240 in-lb (27.12 N·m) applied torque.

(c) Install the pin [1].

SUBTASK 32-34-00-420-003

CAUTION	MAKE SURE THAT THE MAIN-GEAR MANUAL EXTENSION-HANDLES ARE IN THEIR V-SLOTS WHEN THE CABLES ARE ADJUSTED. WHEN YOU MOVE THE CONTROL HANDLE TO THE UP POSITION, DAMAGE CAN OCCUR WHEN THE HANDLES ARE NOT IN THEIR V-SLOTS.

(12) Adjust the turnbuckle on cable MLGEA until the rig pin LGEA 2 or LGEA 3 fits freely in the manual extension mechanism and the cable guard.

SUBTASK 32-34-00-080-002

(13) Remove the rig pin LGEA2 or LGEA3 from the manual extension mechanism and cable guard.

(a) Install the locking clips on the turnbuckle.

SUBTASK 32-34-00-710-001

(14) Test the manual extension system for the main gear.

(a) If airplane is on jacks, do this task: Main Gear Manual Extension System Test - Airplane on Jacks, TASK 32-34-00-730-801.

(b) If airplane is not on jacks, do this task: Main Gear Manual Extension System Test - Airplane not on Jacks, TASK 32-34-00-730-802.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-34-00-410-001

(1) Install the ceiling panels that you removed in the forward cargo compartment.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD CARGO COMPARTMENT
(CEILING PANEL INSTALLED)

A

G26913 S0006575345_V2

Main Gear Manual Extension System - Turnbuckle Location
Figure 501/32-34-00-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD CARGO COMPARTMENT
(CEILING PANEL REMOVED)

B

G26914 S0006575346_V2

Main Gear Manual Extension System - Turnbuckle Location
Figure 501/32-34-00-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

G26918 S0006575347_V2

Main Gear Manual Extension System - Adjustment
Figure 502/32-34-00-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G26921 S0006575348_V3

Main Gear Manual Extension System - Adjustment
Figure 502/32-34-00-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-34-00-730-801

3. Main Gear Manual Extension System Test - Airplane on Jacks

(Figure 503)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) The normal extension/retraction system will not operate with the cover for the alternate extend T handle open; make sure that the cover is closed when you will extend or retract the landing gear with the landing gear control handle.

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-10-740-801	Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test (P/B 501)

C. Tools/Equipment

Reference	Description
STD-1184	Scale - Spring, 0-100 Lbs, Tension

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Test

SUBTASK 32-34-00-480-002

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-34-00-580-004

(2) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-34-00-860-005

(3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-00-860-006

(4) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7

SUBTASK 32-34-00-860-008

(5) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-34-00-860-010

(6) Make sure that the control lever for the landing gear is in the DN position.

SUBTASK 32-34-00-860-025

WARNING OBEY THE INSTRUCTIONS IN THE PROCEDURE TO PUT THE SPEEDBRAKE HANDLE TO THE DOWN POSITION. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

(7) Put the speedbrake handle to the down position.

SUBTASK 32-34-00-860-011

(8) Move the No. 1 and No. 2 throttle levers to the full forward position.

F. Main Gear Manual Extension System Test

SUBTASK 32-34-00-860-012

(1) Put the control lever in the OFF position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-00-700-002

(2) Pull the manual extension handle for the left main gear.

(a) Make sure that the full travel of the T handle is at least 18.5 in. (469.9 mm).

SUBTASK 32-34-00-700-003

(3) Release the manual extension handle for the left main gear.

(a) Make sure that the handle returns to the stowed position without hesitation or binding.

SUBTASK 32-34-00-480-003

(4) Attach a spring scale (0-100 Lbs), STD-1184, to the manual extension T handle for the left main gear.

SUBTASK 32-34-00-730-001

(5) Pull the manual extension handle for the left main gear.

(a) Make sure that the load to start the T handle from the seat has a minimum of 3.0 lbf (13.3 N).

(b) Make sure that the load during the full travel of the T handle is not more than 18.0 lbf (80.1 N).

NOTE: The T handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

(c) Make sure that the manual extension mechanism operates freely.

SUBTASK 32-34-00-730-011

(6) Pull the manual extension handle for the right main gear.

(a) Make sure that the full travel of the T handle is at least 18.5 in. (469.9 mm).

SUBTASK 32-34-00-730-012

(7) Release the manual extension handle for the right main gear.

(a) Make sure that the handle returns to the stowed position without hesitation or binding.

SUBTASK 32-34-00-860-038

(8) Remove the spring scale from the manual extension T handle for the left main gear.

SUBTASK 32-34-00-480-012

(9) Attach a spring scale to the manual extension T handle for the right main gear.

SUBTASK 32-34-00-730-013

(10) Pull the manual extension handle for the right main gear.

(a) Make sure that the load to start the T handle from the seat has a minimum of 3.0 lbf (13.3 N).

(b) Make sure that the load during the full travel of the T handle is not more than 18.0 lbf (80.1 N).

NOTE: The T handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

(c) Make sure that the manual extension mechanism operates freely.

SUBTASK 32-34-00-080-004

(11) Remove the downlock pin from the left and right main gears, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-00-860-048

(12) Remove the spring scale from the manual extension T handle for the right main gear.

SUBTASK 32-34-00-860-019

(13) Make sure that the cover for the T handle is closed.

NOTE: The extension/retraction system will not operate with the cover for the alternate extend T handle open.

SUBTASK 32-34-00-860-017

(14) Move the control lever for the landing gear to the DN position.

SUBTASK 32-34-00-730-003

WARNING MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE MAIN LANDING GEAR. FAST MOVEMENT OF THE MAIN LANDING GEAR CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(15) Move the control lever for the landing gear to UP and wait while the main gear retracts.

SUBTASK 32-34-00-860-026

(16) Open the access door to the manual extension T handles.

SUBTASK 32-34-00-730-007

(17) Pull the manual extension handle of the left main gear.

NOTE: The T handle must be pulled upward and forward. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

SUBTASK 32-34-00-700-011

(18) Make sure that the left main gear free falls to the down and locked position.

(a) Make sure that the green light for the left main gear is on.

(b) Make sure that the red light for the left main gear is on.

NOTE: The red light for the main gear will stay on to show that the landing gear control lever and landing gear positions disagree.

SUBTASK 32-34-00-700-012

(19) Release the manual extension handle for the left main gear.

SUBTASK 32-34-00-730-014

(20) Pull the manual extension handle of the right main gear.

NOTE: The T handle must be pulled upward and forward. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

SUBTASK 32-34-00-700-033

(21) Make sure that the right main gear free falls to the down and locked position.

(a) Make sure that the green light for the right main gear is on.

(b) Make sure that the red light for the right main gear is on.

NOTE: The red light for the main gear will stay on to show that the landing gear control lever and landing gear positions disagree.

SUBTASK 32-34-00-730-015

(22) Release the manual extension handle for the right main gear.

SUBTASK 32-34-00-860-029

(23) Move the control lever for the landing gear to the DOWN position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the red light for the main gear is off.

SUBTASK 32-34-00-860-037

(24) Make sure that the cover for the T-handle is closed.

SUBTASK 32-34-00-860-027

(25) Move the control lever for the landing gear to the OFF position.

SUBTASK 32-34-00-730-009

(26) Move the control lever for the landing gear to UP and wait while the main gear retracts.

SUBTASK 32-34-00-860-024

(27) Put the landing gear control lever in the OFF position.

SUBTASK 32-34-00-860-030

(28) Open the access door to the manual extension T handles.

SUBTASK 32-34-00-700-015

(29) Attach a spring scale (0-100 Lbs), STD-1184, to the manual extension T handle for the left main gear.

SUBTASK 32-34-00-730-004

(30) Pull the manual extension handle for the left main gear.

(a) Make sure that the maximum load when you pull the T handle is not more than 50.0 lbf (222.4 N).

NOTE: The T handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

SUBTASK 32-34-00-700-006

(31) Make sure that the left main gear free falls to the down and locked position.

(a) Make sure that the green light for the left main gear is on.

(b) Make sure that the red light for the left main gear is on.

NOTE: The red light for the main gear will stay on to show that the landing gear control lever and landing gear positions disagree.

SUBTASK 32-34-00-080-005

(32) Remove the spring scale from the manual extension T handles for the left main gear.

SUBTASK 32-34-00-730-017

(33) Attach a spring scale to the manual extension T handle for the right main gear.

SUBTASK 32-34-00-860-050

(34) Pull the manual extension handle for the right main gear.

(a) Make sure that the maximum load when you pull the T handle is not more than 50.0 lbf (222.4 N).

NOTE: The T handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

SUBTASK 32-34-00-860-051

(35) Make sure that the right main gear free falls to the down and locked position.

(a) Make sure that the green light for the right main gear is on.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Make sure that the red light for the right main gear is on.

NOTE: The red light for the main gear will stay on to show that the landing gear control lever and landing gear positions disagree.

SUBTASK 32-34-00-860-052

(36) Move the control lever for the landing gear to the DOWN position.

(a) Make sure that the red lights for the right and left main gear are off.

SUBTASK 32-34-00-860-053

(37) Remove the spring scale from the manual extension T handles for the right main gear.

SUBTASK 32-34-00-860-054

(38) Make sure that the cover for the T-handles is closed.

G. Put the Airplane Back to its Usual Condition

SUBTASK 32-34-00-860-015

(1) For Hydraulic System A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-34-00-480-005

(2) Install the downlock pin on the main gear that you tested, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-34-00-840-001

(3) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-34-00-860-021

(4) Move the No. 1 and No. 2 throttle levers back to the idle position (full aft).

SUBTASK 32-34-00-840-004

(5) Close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 32-34-00-860-022

(6) If electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 32-34-00-580-003

(7) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-00-200-002

(8) Check the Proximity Switch Electronic Unit (PSEU) for stored faults using the self test, do this task: Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test, TASK 32-09-10-740-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Gear Manual Extension System - System Test
Figure 503/32-34-00-990-803 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2018353 S0000398677_V2

Main Gear Manual Extension System - System Test
Figure 503/32-34-00-990-803 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-34-00-730-802

4. Main Gear Manual Extension System Test - Airplane not on Jacks

(Figure 503)

A. General

(1) The normal extension/retraction system will not operate with the cover for the alternate extend T handle open; make sure the cover is closed when you will extend or retract the landing gear with the landing gear control handle.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Prepare for the Test

SUBTASK 32-34-00-480-006

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-34-00-860-044

(2) Make sure that the manual extension release mechanism of the landing gear is free from contamination.

SUBTASK 32-34-00-860-045

(3) Make sure that the hydraulic power is off, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-34-00-860-046

(4) Make sure the control lever for the landing gear is in the DN position.

E. Main Gear Manual Extension System Test

SUBTASK 32-34-00-860-018

(1) Put the control lever for the landing gear in the OFF position.

SUBTASK 32-34-00-700-007

(2) Pull the manual extension handle for the left main gear.

(a) Make sure that the full travel of the T handle is at least 18.5 in. (469.9 mm).

SUBTASK 32-34-00-700-008

(3) Release the manual extension handle for the left main gear.

(a) Make sure that the handle returns to the stowed position without hesitation or binding.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-00-480-007

(4) Attach a spring scale to the manual extension T handle for the left main gear.

SUBTASK 32-34-00-730-005

(5) Pull the manual extension handle for the left main gear.

(a) Make sure that the load to start the T handle from the seat has a minimum of 3.0 lbf (13.3 N).

(b) Make sure that the load during the full travel of the T handle is not more than 18.0 lbf (80.1 N).

NOTE: The T handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

(c) Make sure that the manual extension mechanism operates freely.

SUBTASK 32-34-00-700-009

(6) Pull the manual extension handle for the right main gear.

(a) Make sure that the full travel of the T handle is at least 18.5 in. (469.9 mm).

SUBTASK 32-34-00-700-010

(7) Release the manual extension handle for the right main gear.

(a) Make sure that the handle returns to the stowed position without hesitation or binding.

SUBTASK 32-34-00-480-008

(8) Attach a spring scale to the manual extension T handle for the right main gear.

SUBTASK 32-34-00-730-006

(9) Pull the manual extension handle for the right main gear.

(a) Make sure that the load to start the T handle from the seat has a minimum of 3.0 lbf (13.3 N).

(b) Make sure that the load during the full travel of the T handle is not more than 18.0 lbf (80.1 N).

NOTE: The T handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

(c) Make sure that the manual extension mechanism operates freely.

SUBTASK 32-34-00-080-006

(10) Remove the spring scale from the manual extension T handles for the main gear.

SUBTASK 32-34-00-860-047

(11) Put the control lever for the landing gear in the DN position.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-34-00-820-802

5. Manual Extension System Access Door Switch Adjustment

(Figure 501, Figure 502, Figure 504)

A. General

(1) This task adjusts (rigs) the manual extension system access door switch (access door position switch) for the main landing gears.

(2) Use this task to get the access door position switch into the correct operating range for the access door position switch to operate correctly.

B. References

Reference	Title
32-00-01 P/B 201	LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES
32-31-51-400-801	Landing Gear Selector Valve Installation (P/B 401)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

E. Prepare for the Adjustment

SUBTASK 32-34-00-860-055

> **WARNING** MAKE CERTAIN LANDING GEAR DOWNLOCK PINS ARE INSTALLED TO PREVENT INADVERTENT RETRACTION OF LANDING GEAR, WITH POSSIBLE INJURY TO PERSONNEL.

(1) Make sure the downlocks are installed on the nose and main landing gear (LANDING GEAR DOWNLOCK PINS - MAINTENANCE PRACTICES, PAGEBLOCK 32-00-01/201).

SUBTASK 32-34-00-840-005

(2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

SUBTASK 32-34-00-010-006

(3) If it is necessary open this access panel:

(TASK 53-14-01-020-801)

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Manual Extension System Access Door Switch Adjustment

SUBTASK 32-34-00-480-009

(1) Open the manual extension system access door [1] located in the flight compartment.

SUBTASK 32-34-00-160-001

(2) Clean the area around the manual extension system access door position switch [2] with alcohol and a dry brush.

NOTE: The location of the manual extension system access door makes it likely to collect dirt and residue found in the cockpit.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424 PRE SB 737-32-1443

SUBTASK 32-34-00-010-003

(3) Make sure that the switch adjustment arm [4] is not bent downward.

(a) If the adjustment arm [4] is bent downward, bend it so that it is straight or replace the actuator with a new one.

(b) If the actuator adjustment arm [4] is twisted, replace the actuator with a new one.

SUBTASK 32-34-00-820-007

(4) Make sure that the adjustment tab is not bent and is even with the actuator arm.

(a) If the adjustment tab is bent, bend it down so that it is flat and even with the actuator arm.

SUBTASK 32-34-00-820-008

(5) Make sure that the switch operates, clicks audibly, at a door open clearance of 2 in. (51 mm) or greater at the forward edge of the door.

LOM 425-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424 POST SB 737-32-1443

SUBTASK 32-34-00-200-003

(6) Check the switch adjustment.

(a) Make sure that the access door [1] remains fully closed with no external force.

(b) With the access door [1] closed, make sure that there is no continuity between C1432 L side and Pin 2 of D11734 Connector.

(c) With the access door [1] open, make sure that there is continuity between C1432 L side and Pin 2 of D11734 Connector.

(d) With the access door [1] fully closed, the access door position switch [2] should not be fully bottomed out since this might hold the door slightly open.

NOTE: The switch has 0.187 in. (4.750 mm) over-travel from point of actuation, an audible click, to fully bottomed out.

SUBTASK 32-34-00-820-011

(7) If the switch does not have sufficient over-travel and access door [1] does not fully close, or if too much force is necessary to close the access door [1], then adjust the height of the switch:

NOTE: The access door position switch usually needs three washers below the bracket to correctly rig the access door position switch.

(a) If the access door position switch [2] is bottomed out and is holding the access door [1] open, add one washer [5] at a time below the bracket until the access door position switch [2] does not hold the access door [1] open.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) If the access door position switch [2] does not actuate when the access door [1] is closed, remove one washer [5] at a time from below the bracket until the access door position switch [2] actuates.

(c) Check the access door position switch [2] adjustment again if washers [5] are added or removed below the access door position switch [2] bracket.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424 PRE SB 737-32-1443

SUBTASK 32-34-00-820-012

(8) Make sure that the access door position switch [2] operates and clicks audibly at a door open clearance of 1.25 in. (31.75 mm) to 2.5 in. (63.5 mm).

SUBTASK 32-34-00-200-004

(9) Check the switch adjustment

(a) Make sure that the access door [1] remains fully closed with no external force.

(b) With the access door [1] closed, make sure that there is no continuity between C1432 L side and Pin 2 of D11734 Connector.

(c) With the access door [1] open, make sure that there is continuity between C1432 L side and Pin 2 of D11734 Connector.

(d) With the access door [1] fully closed, the switch should not be fully bottomed out since this might hold the door slightly open.

NOTE: The switch has 0.187 in. (4.750 mm) over-travel from point of actuation, an audible click, to fully bottomed out.

SUBTASK 32-34-00-820-009

(10) If the access door position switch [2] does not have sufficient over-travel and access door [1] does not fully close, or if too much force is necessary to close the access door [1], bend the adjustment tab upward slightly to provide the necessary over-travel.

(a) Use a flat screwdriver blade of the correct size to make the adjustment.

SUBTASK 32-34-00-820-010

(11) Make sure that the access door position switch [2] still operates, clicks audibly, at a door open clearance of 2 in. (51 mm) or greater after any adjustments.

NOTE: Switches that operate at a minimum of 1.25 in. (31.75 mm) of door open clearance are acceptable, but this can cause erratic operation and service problems. The above adjustment procedure will make sure that the switch always operates at a door clearance of 2 in. (51 mm) or greater.

LOM ALL

G. Functional Check of Manual Extension System Access Door

SUBTASK 32-34-00-720-002

(1) Do the Alternate Landing Gear Test of: Landing Gear Selector Valve Installation, TASK 32-31-51-400-801.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-34-00-410-003

(1) If necessary close this access panel:

(TASK 53-14-01-420-801)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

SUBTASK 32-34-00-840-006

(2) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

ACCESS DOOR POSITION SWITCH ADJUSTMENT

B

479718 S0006575353_V3

Landing Gear Manual Extension Access Door Switch Adjustment
Figure 504/32-34-00-990-804 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

ACCESS DOOR

A

ACCESS DOOR POSITION SWITCH ADJUSTMENT

A-A

2018484 S0000398678_V3

Landing Gear Manual Extension Access Door Switch Adjustment
Figure 504/32-34-00-990-804 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR MANUAL EXTENSION CONTROL MECHANISM - REMOVAL/INSTALLATION

1. General

A. The manual extension control mechanism provides controls for the nose gear manual extension system and each main gear manual extension system. The complete mechanism must be removed and installed when you do maintenance on a part of the drum assembly for the nose or main gear manual extension systems.

B. This procedure has these tasks:

(1) A removal of the manual extension control mechanism (referred to as the mechanism assembly [38]) for the landing gear

(2) An installation of the mechanism assembly [38] for the landing gear.

(3) A removal of the manual extension system access door switch.

(4) An installation of the manual extension system access door switch.

TASK 32-34-11-000-801

2. Main Gear Manual Extension Control Mechanism Removal

(Figure 401, Figure 402)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
33-18-00-960-805	Annunciator And Dimming Module - Module Replacement (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-21-00-000-801	Passenger Cabin Floor Panel - Removal (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
116	Nose Landing Gear Wheel Well - Right
122	Forward Cargo Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

C. Access Panels

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for the Removal

SUBTASK 32-34-11-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-34-11-860-001

(2) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-34-11-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-34-11-010-001

(4) To get access to the turnbuckle locking clips, do this task: Passenger Cabin Floor Panel - Removal, TASK 53-21-00-000-801.

SUBTASK 32-34-11-010-003

(5) Disconnect the cable MNGEA [3] at the turnbuckle.

SUBTASK 32-34-11-010-002

(6) Remove the cargo compartment ceiling panels at approximately body station 420 to remove the turnbuckle locking clips.

(a) Disconnect the cables MLGEA [1, 2] at the turnbuckles.

E. Main Gear Manual Extension Control Mechanism Removal

SUBTASK 32-34-11-010-004

(1) To get access to the mechanism assembly [38], do this task:

Open this access panel:

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

SUBTASK 32-34-11-020-007

(2) Remove the annunciator and dimming module. Do this task Annunciator And Dimming Module - Module Replacement, TASK 33-18-00-960-805.

NOTE: The Module is removed to gain access to the mechanism assembly [38].

SUBTASK 32-34-11-020-002

(3) Remove the pins [34] and disconnect the manual extension handle cables [29] from the drum assemblies [23], (Figure 402).

SUBTASK 32-34-11-020-003

(4) Remove the cable retainer bolts [35] and disconnect the manual extension cables [1, 2, 3] from the drum assemblies [23].

SUBTASK 32-34-11-020-004

(5) Remove the nuts [26], washers [25], bolts [22], and the cable guard standoffs spacers [24] from the outboard guard assembly [27] and inboard guard assembly [21].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-11-020-005

(6) Remove the pin [32], the nut [33], and the washer [28] from the shaft [30].

SUBTASK 32-34-11-020-006

(7) Remove the shaft [30] from the mechanism assembly [38].

NOTE: When you pull the shaft [30] from the mechanism assembly [38] make sure you catch the spacer [31] and spacer [36].

SUBTASK 32-34-11-000-001

(8) Remove the mechanism assembly [38], with the drum assemblies [23] and outboard guard assembly [27] and inboard guard assembly [21], from the airplane structure. Move the outboard end of the mechanism assembly [38] forward to remove it.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F85488 S0006575357_V2

Manual Extension Cable Turnbuckle Locations
Figure 401/32-34-11-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Manual Extension Cable Turnbuckle Locations
Figure 401/32-34-11-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F84911 S0006575359_V2

Manual Extension Control Mechanism Installation
Figure 402/32-34-11-990-802 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2018490 S0000398680_V2

Manual Extension Control Mechanism Installation
Figure 402/32-34-11-990-802 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F85161 S0006575360_V2

Manual Extension Control Mechanism Installation
Figure 402/32-34-11-990-802 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CONTROL DRUM ORIENTATION

A-A

G24986 S0006575361_V2

Manual Extension Control Mechanism Installation
Figure 402/32-34-11-990-802 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C

CONTROL DRUM ORIENTATION

A-A

2018600 S0000398681_V2

Manual Extension Control Mechanism Installation
Figure 402/32-34-11-990-802 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(INBOARD CABLE GUARD AND INBOARD CONTROL DRUM ARE NOT SHOWN)

D

Manual Extension Control Mechanism Installation
Figure 402/32-34-11-990-802 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-34-11-400-801

3. Main Gear Manual Extension Control Mechanism Installation

(Figure 401, Figure 402)

A. References

Reference	Title
32-34-00-730-801	Main Gear Manual Extension System Test - Airplane on Jacks (P/B 501)
32-34-00-820-801	Main Landing Gear Manual Extension System Adjustment and Test (P/B 501)
32-35-00-730-801	Nose Gear Manual Extension System Test - Airplane on Jacks (P/B 501)
32-35-00-820-801	Nose Landing Gear Manual Extension System Adjustment (P/B 501)
33-18-00-960-805	Annunciator And Dimming Module - Module Replacement (P/B 201)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)
53-21-00-400-801	Passenger Cabin Floor Panel - Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
D50180	Grease - Aircraft General Purpose (AeroShell Grease 33)	BMS3-33, MIL-PRF-23827

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
21	Guard assembly	32-34-11-02-205	LOM ALL
23	Drum assembly	32-34-11-02-160	LOM ALL
		32-34-11-02-165	LOM ALL
27	Guard assembly	32-34-11-02-225	LOM ALL
30	Shaft	32-34-11-02-142	LOM ALL
32	Pin	32-34-11-02-045	LOM ALL
34	Pin	32-34-11-02-040	LOM ALL

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
116	Nose Landing Gear Wheel Well - Right
122	Forward Cargo Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

E. Access Panels

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Main Gear Manual Extension Control Mechanism Installation

SUBTASK 32-34-11-400-001

(1) Put the drum assemblies [23], the spacer [31] and spacer [36] in position between the inboard guard assembly [21] and outboard guard assembly [27].

SUBTASK 32-34-11-420-010

(2) Install the cable guard standoffs spacers [24] with the nuts [26], washers [25], and bolts [22] to the outboard guard assembly [27] and inboard guard assembly [21].

SUBTASK 32-34-11-420-001

(3) Put the shaft [30] through the support, the inboard guard assembly [21], the outboard guard assembly [27], the spacer [31], spacer [36], the drum assemblies [23], and the structure.

SUBTASK 32-34-11-420-002

(4) Apply a thin coat of AeroShell Grease 33, D50180 to the threads of the shaft [30].

(5) Install the spacer [37], the washer [28], and the nut [33] on the shaft [30].

SUBTASK 32-34-11-420-007

(6) Tighten the nut [33] to 50 in-lb (6 N·m) – 180 in-lb (20 N·m).

SUBTASK 32-34-11-420-008

(7) Install the pin [32].

SUBTASK 32-34-11-420-003

(8) Install the manual extension cables [1, 2, 3] on the control drum assemblies [23].

(a) Install the cable retainer bolt [35] to attach the cables [1, 2, 3] to the drum assemblies [23].

SUBTASK 32-34-11-420-004

(9) Install the manual extension handle cables [29] on the drum assemblies [23].

(a) Install the pins [34] to attach the manual extension handle cables [29] to the drum assemblies [23].

1) Bend the end of the pins [34] into the drum assemblies [23].

SUBTASK 32-34-11-420-005

(10) Connect the cables MLGEA [1, 2] at the turnbuckles, located at approximately body station 420.

SUBTASK 32-34-11-420-006

(11) Connect the cable MNGEA [3] at the turnbuckle.

SUBTASK 32-34-11-420-009

(12) Install the annunciator and dimming module. Do this task: Annunciator And Dimming Module - Module Replacement, TASK 33-18-00-960-805.

SUBTASK 32-34-11-820-001

(13) Do the adjustment of the manual extension system for the main landing gear, do this task: Main Landing Gear Manual Extension System Adjustment and Test, TASK 32-34-00-820-801.

SUBTASK 32-34-11-710-001

(14) Do a test on the manual extension system for the main landing gear, do this task: Main Gear Manual Extension System Test - Airplane on Jacks, TASK 32-34-00-730-801.

SUBTASK 32-34-11-820-002

(15) Do the adjustment of the manual extension system for the nose landing gear, do this task: Nose Landing Gear Manual Extension System Adjustment, TASK 32-35-00-820-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-11-710-002

(16) Do a test on the manual extension system for the nose landing gear, do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, TASK 32-35-00-730-801.

SUBTASK 32-34-11-410-003

(17) Install this access panel:

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

SUBTASK 32-34-11-410-001

(18) Install the cargo compartment ceiling panels at approximately body station 420.

SUBTASK 32-34-11-410-002

(19) Install the cabin floor panel, do this task: Passenger Cabin Floor Panel - Installation, TASK 53-21-00-400-801.

——— END OF TASK ———

TASK 32-34-11-820-801

4. Removal of the Manual Extension System Access Door Switch

(Figure 403)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
116	Nose Landing Gear Wheel Well - Right
122	Forward Cargo Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

C. Access Panels

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

D. General

SUBTASK 32-34-11-820-003

(1) This procedure removes the manual extension system access door switch for the main landing gears.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Procedure

SUBTASK 32-34-11-860-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-34-11-840-001

(2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

SUBTASK 32-34-11-010-012

(3) Open this access panel:

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424 PRE SB 737-32-1443

SUBTASK 32-34-11-480-002

(4) Locate the access door position switch [52] and associated wires [57].

SUBTASK 32-34-11-010-005

(5) Remove the screws [55] and washers [54].

SUBTASK 32-34-11-010-006

(6) Remove the access door position switch [52] and actuator [53] assembly for the mounting location.

SUBTASK 32-34-11-010-007

(7) Note and tag the wire [57] positions relative to the access door position switch [52].

SUBTASK 32-34-11-010-008

(8) Unscrew the terminal screws [56] and disconnect the wires [57].

LOM 425-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424 POST SB 737-32-1443

SUBTASK 32-34-11-010-013

(9) Open the access door [51].

SUBTASK 32-34-11-020-008

(10) Disconnect the switch from the airplane.

(a) Remove the screws [58] and the washers [59] from the switch bracket [63].

(b) Remove the torque nut [60], the lock washer [61], the keyway washer [62], the switch bracket [63], and the washers [64] from the access door position switch [65].

NOTE: Record the quantity of installed washers [64].

(c) Put the switch end of the access door position switch [65] through the hole in the floor.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Remove the screw [66], the washer [67], and the clamp [68] from the structure.

(e) Disconnect the access door position switch [65] from the wire [57] at the location of the clamp [69].

LOM ALL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Landing Gear Manual Extension Access Door Switch Installation
Figure 403/32-34-11-990-803 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ACCESS DOOR POSITION SWITCH

C

L60521 S0006575366_V2

Landing Gear Manual Extension Access Door Switch Installation
Figure 403/32-34-11-990-803 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Landing Gear Manual Extension Access Door Switch Installation
Figure 403/32-34-11-990-803 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Landing Gear Manual Extension Access Door Switch Installation
Figure 403/32-34-11-990-803 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-34-11-820-802

5. Installation of the Manual Extension System Access Door Switch

(Figure 403)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-34-00-820-802	Manual Extension System Access Door Switch Adjustment (P/B 501)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
116	Nose Landing Gear Wheel Well - Right
122	Forward Cargo Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

C. Access Panels

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

D. General

SUBTASK 32-34-11-820-004

(1) This procedure installs the manual extension system access door switch for the main landing gears.

E. Procedure

SUBTASK 32-34-11-860-003

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-34-11-840-002

(2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424 PRE SB 737-32-1443

SUBTASK 32-34-11-480-003

(3) Locate the access door position switch [52], the actuator [53] and the associated wires [57].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424 PRE SB 737-32-1443 (Continued)

SUBTASK 32-34-11-010-009

(4) Note the position of the wires [57] and connect the wires [57] to the access door position switch [52]. Install the terminal screws [56] and tighten to a torque not to exceed 9 in-lb (1 N·m).

SUBTASK 32-34-11-010-010

(5) Assemble and mount the access door position switch [52] and the actuator [53] assembly to their mounting position and install the screws [55] and the washers [54]. Tighten the screws [55] to a torque of 15 in-lb (2 N·m).

LOM 425-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-424 POST SB 737-32-1443

SUBTASK 32-34-11-400-002

(6) Connect the access door position switch [65] to the wire [57] at the location of the clamp [69].

(a) Make sure the plug and socket are fully engaged, which is identified with two clicks.

(b) Install the clamp [68] on the wires of the access door position switch [65].

(c) Position the clamp [68] on the structure.

(d) Install the washer [67], and the screw [66] through the clamp [68] and through the structure.

(e) Put the switch end of the access door position switch [65] through the hole in the floor.

(f) Install the washers [64], the switch bracket [63], the keyway washer [62], the lock washer [61], and the torque nut [60] on the access door position switch [65].

NOTE: Use a minimum of three washers [64]. Use more washers [64] if necessary for adjustment.

1) Tighten the torque nut [60] to 13.0 ±2.0 in-lb (1.5 ±0.3 N·m).

(g) Position the switch bracket [63] on the structure.

(h) Install the washers [59] and the screws [58] on the switch bracket [63].

LOM ALL

SUBTASK 32-34-11-010-011

(7) Do the adjustment of the manual extension system door access switch. Do this task: Manual Extension System Access Door Switch Adjustment, TASK 32-34-00-820-802.

SUBTASK 32-34-11-410-004

(8) Close this access panel:

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

SUBTASK 32-34-11-840-003

(9) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR MANUAL EXTENSION MECHANISM - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks that apply to the left or right main landing gear:

(1) A removal of the manual extension mechanism (referred to as the mechanism assembly [21]), for the main gear

(2) An installation of the mechanism assembly [21] for the main gear.

TASK 32-34-21-000-801

2. Removal of the Manual Extension Mechanism for the Main Gear

(Figure 401, Figure 402)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
25-22-00-000-801	Passenger Seat - Removal (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Location Zones

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Prepare for the Removal

SUBTASK 32-34-21-480-001

> **WARNING** MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-34-21-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-21-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-34-21-480-002

WARNING	MAKE SURE THAT YOU INSTALL THE RIG PIN IN THE MANUAL EXTENSION MECHANISM. IF YOU DO NOT OBEY, THE SPRING IN THE MECHANISM COULD UNWIND AND CAUSE INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(4) Install the rig pin LGEA2 (L/H), or LGEA3 (R/H) from rigging pin kit, SPL-1585 through the rig pin holes in the mechanism assembly [21].

SUBTASK 32-34-21-010-001

(5) Remove the ceiling panels in the forward cargo compartment that are at approximately body station 420.

SUBTASK 32-34-21-020-001

(6) Remove the locking clips from the turnbuckle [2].

SUBTASK 32-34-21-020-002

(7) Loosen the cable assembly [1] at the turnbuckle [2].

SUBTASK 32-34-21-010-002

(8) For the passenger seats that are at approximately body station 692 (Passenger Seat - Removal, TASK 25-22-00-000-801).

SUBTASK 32-34-21-010-003

(9) Remove the floor panels at approximately body station 692.

E. Manual Extension Mechanism Removal

SUBTASK 32-34-21-020-003

(1) Remove the pin [33], nut [32], washer [31], bolt [29], and washer [30] to disconnect the control rod from the uplock kicker arm.

SUBTASK 32-34-21-020-004

(2) Remove the nut [28], washers [26], bolt [25], and spacer [27] from the cable guard bracket on the mechanism assembly [21].

SUBTASK 32-34-21-020-005

(3) Remove the nuts [24], washers [23], and bolts [22] to disconnect the mechanism assembly [21] from the structure.

SUBTASK 32-34-21-020-006

(4) Remove the pin [34].

SUBTASK 32-34-21-020-009

(5) Disconnect the cable assembly [1] from the mechanism assembly [21].

SUBTASK 32-34-21-020-007

(6) Remove the mechanism assembly [21] from the airplane.

SUBTASK 32-34-21-420-001

(7) Install the bolt [25], spacer [27], washers [26], and nut [28] on the cable guard bracket on the mechanism assembly [21].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD CARGO COMPARTMENT
(CEILING PANEL INSTALLED)

A

F84921 S0006575371_V2

Manual Extension Cable Turnbuckle Locations
Figure 401/32-34-21-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD CARGO COMPARTMENT
(CEILING PANEL REMOVED)

B

F84955 S0006575372_V3

Manual Extension Cable Turnbuckle Locations
Figure 401/32-34-21-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

F84948 S0006575373_V2

Main Landing Gear Manual Extension Mechanism Installation
Figure 402/32-34-21-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F84916 S0006575374_V4

Main Landing Gear Manual Extension Mechanism Installation
Figure 402/32-34-21-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Manual Extension Mechanism Installation
Figure 402/32-34-21-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-34-21-400-801

3. Installation of the Manual Extension Mechanism for the Main Gear

(Figure 401, Figure 402)

A. References

Reference	Title
25-22-00-400-802	Passenger Seat - Installation (P/B 401)
32-32-31-400-801	Main Gear Uplock Assembly Installation (P/B 401)
32-34-00-730-801	Main Gear Manual Extension System Test - Airplane on Jacks (P/B 501)
32-34-00-730-802	Main Gear Manual Extension System Test - Airplane not on Jacks (P/B 501)
32-34-00-820-801	Main Landing Gear Manual Extension System Adjustment and Test (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

D. Location Zones

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

E. Manual Extension Mechanism Installation

SUBTASK 32-34-21-600-001

(1) Apply sealant, A00247, to the entire top surface of the bracket on the mechanism assembly [21].

SUBTASK 32-34-21-420-002

(2) Put the mechanism assembly [21] in its position on the main wheel well ceiling.

SUBTASK 32-34-21-600-002

(3) Apply sealant, A00247, to the threads and below the head of the bolts [22], and the washers [23].

SUBTASK 32-34-21-420-003

(4) Install the bolts [22], washers [23], and nuts [24].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-21-020-008

(5) Connect the cable assembly [1] to the mechanism assembly [21].

SUBTASK 32-34-21-020-010

(6) Install the pin [34].

SUBTASK 32-34-21-420-004

(7) Install the bolt [29] and washer [30] to connect the control rod of the mechanism assembly [21] to the uplock kicker arm. Put the countersink on the washer [30] against the head of the bolt [29].

SUBTASK 32-34-21-420-005

(8) Install the washer [31] and nut [32].

NOTE: Do not tighten the nut [32] fully.

SUBTASK 32-34-21-820-001

(9) Make sure that the uplock assembly is correctly adjusted to engage the uplock roller on the main gear when the gear is retracted (Main Gear Uplock Assembly Installation, TASK 32-32-31-400-801).

SUBTASK 32-34-21-980-001

(10) Put the uplock hook in the up and locked position.

SUBTASK 32-34-21-820-002

(11) Install the rig pin LGEA2 (L/H), or LGEA3 (R/H) from rigging pin kit, SPL-1585, through the rig pin holes in the mechanism assembly [21].

SUBTASK 32-34-21-820-003

(12) Loosen the jamnut on the control rod on the mechanism assembly [21].

SUBTASK 32-34-21-820-004

(13) Adjust the control rod to get a gap of 0.0625 in. (1.59 mm) to 0.220 in. (5.59 mm) between the uplock kicker arm and the upper lock link, (Figure 402).

SUBTASK 32-34-21-420-006

(14) Tighten the jamnut on the control rod to 95 in-lb (11 N·m) – 160 in-lb (18 N·m).

SUBTASK 32-34-21-420-009

(15) Install a lockwire on the jamnut on the control rod.

SUBTASK 32-34-21-080-001

(16) Remove the rig pin LGEA2, or LGEA3 from the mechanism assembly [21].

SUBTASK 32-34-21-980-002

(17) Put the uplock hook in the down and locked position before performing a gear retraction.

SUBTASK 32-34-21-700-002

(18) Turn the cable quadrant to make sure that the control rod does not rub against the uplock kicker arm.

(a) Install the rig pin LGEA2, or LGEA3 from rigging pin kit, SPL-1585, through the rig pin holes in themechanism assembly [21].

SUBTASK 32-34-21-420-007

(19) Do these steps to tighten the bolt [29] and nut [32] to a torque of between 80 in-lb (9 N·m) plus run-on torque (minimum) to 240 in-lb (27 N·m) (maximum):

(a) Begin at the minimum torque value and increase the torque as necessary to align the castellation in the nut [32] with the hole in the bolt [29].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Make sure that you do not use more than 240 in-lb (27 N·m) applied torque.

(c) Install the pin [33].

SUBTASK 32-34-21-420-008

(20) Tighten the cable assembly [1] at the turnbuckle [2].

SUBTASK 32-34-21-820-005

(21) Do the adjustment of the manual extension system for the main gear (Main Landing Gear Manual Extension System Adjustment and Test, TASK 32-34-00-820-801).

SUBTASK 32-34-21-710-001

(22) Do a test on the manual extension system for the main gear.

(a) If the airplane is on jacks, do this task: Main Gear Manual Extension System Test - Airplane on Jacks, TASK 32-34-00-730-801.

(b) If the airplane is not on jacks, do this task: Main Gear Manual Extension System Test - Airplane not on Jacks, TASK 32-34-00-730-802.

SUBTASK 32-34-21-410-001

(23) Install the ceiling panels that you removed in the forward cargo compartment.

SUBTASK 32-34-21-410-002

(24) Install the floor panels that you removed at approximately body station 692.

SUBTASK 32-34-21-410-003

(25) Install the passenger seats that you removed at approximately body station 692 (Passenger Seat - Installation, TASK 25-22-00-400-802).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN GEAR MANUAL EXTENSION SYSTEM CABLES - REMOVAL/INSTALLATION

1. General

A. This procedure has these two tasks:

(1) A removal of the manual extension system cables (referred to as cable assembly [1], cable assembly [3], cable assembly [4], or cable assembly [5]) for the main landing gear

(2) An installation of the manual extension system cables for the main landing gear.

TASK 32-34-31-000-801

2. Main Gear Manual Extension System Cables Removal

(Figure 401)

A. References

Reference	Title
20-10-04-000-801	Control Cable Half Ball Pressure Seal Removal (P/B 401)
20-10-91-000-801	Control Cables Removal (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

C. Manual Extension Cable Removal

SUBTASK 32-34-31-010-001

(1) Remove the cargo compartment ceiling panels [6] at approximately body station 420 to remove the turnbuckle locking clips [7].

(a) Disconnect the cable assembly [1] from the cable assembly [3] or the cable assembly [4] from the cable assembly [5] at the turnbuckle [2].

SUBTASK 32-34-31-010-002

(2) Remove the forward access panel from the ceiling of the nose wheel well.

SUBTASK 32-34-31-010-003

(3) Remove the nuts [11], washers [10], cable guard standoffs [9], and bolts [8] from the manual extension control mechanism.

SUBTASK 32-34-31-020-001

(4) Remove the pins [12] to disconnect the manual extension handle cable from the MLGEA control drum on the manual extension control mechanism (Detail E).

SUBTASK 32-34-31-020-002

(5) Remove the cable retainer bolt [13] (Detail F).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-31-020-005

(6) Disconnect the cable assembly [3] or cableassembly [4] from the MLGEA control drum on the manual extension control mechanism.

SUBTASK 32-34-31-020-003

(7) Remove the pressure seal [14] on the wheel well of the main landing gear, do this task: Control Cable Half Ball Pressure Seal Removal, TASK 20-10-04-000-801.

SUBTASK 32-34-31-020-004

(8) Remove the pin [15].

SUBTASK 32-34-31-020-006

(9) Disconnect the cable assy [1] or the cable assy [5] from the quadrant assembly on the main landing gear manual extension mechanism.

SUBTASK 32-34-31-000-001

(10) Remove the cable assembly [1] from the cable assembly [3] or the cable assembly [4] from the cable assembly [5], do this task: Control Cables Removal, TASK 20-10-91-000-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD CARGO COMPARTMENT
(CEILING PANEL INSTALLED)

A

F85985 S0006575380_V2

Main Gear Manual Extension System Cable Installation
Figure 401/32-34-31-990-801 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Gear Manual Extension System Cable Installation
Figure 401/32-34-31-990-801 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Gear Manual Extension System Cable Installation
Figure 401/32-34-31-990-801 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLES A, B, C AND D

CABLE REF	FUNCTION	NO. REQ	LENGTH INCHES (METERS)	CABLE SIZE	FITTINGS	
					1	2
A	MLGEA-R	1	163.7 (4.158)	3/32 7x7	BACT14A3	MS21260L3 LH
B	MLGEA-R	1	543.9 (13.815)	3/32 7x7	BACT14A3	MS21260L3 RH
C	MLGEA-L	1	182.4 (4.633)	3/32 7x7	BACT14A3	MS21260L3 LH
D	MLGEA-L	1	543.9 (13.815)	3/32 7x7	BACT14A3	MS21260L3 RH

MATERIAL: CABLE - CARBON STEEL PER BMS 7-265, TYPE I, COMPOSITION A, TIN-ZINC (TZ)

G45347 S0006575384_V5

Main Gear Manual Extension System Cable Installation
Figure 401/32-34-31-990-801 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

F85989 S0006575390_V2

Main Gear Manual Extension System Cable Installation
Figure 401/32-34-31-990-801 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Gear Manual Extension System Cable Installation
Figure 401/32-34-31-990-801 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-34-31-400-801

3. Main Gear Manual Extension System Cables Installation

A. References

Reference	Title
20-10-04-400-801	Control Cable Half Ball Pressure Seal Installation (P/B 401)
20-10-91-400-801	Control Cables Installation (P/B 401)
32-34-00-730-802	Main Gear Manual Extension System Test - Airplane not on Jacks (P/B 501)
32-34-00-820-801	Main Landing Gear Manual Extension System Adjustment and Test (P/B 501)

B. Consumable Materials

Reference	Description	Specification
C00174	Compound - Corrosion Preventive, Solvent Cutback, Cold Application	MIL-PRF-16173 (Supersedes MIL-C-16173)
C00528	Compound - Corrosion Preventive, Petroleum Hot Application (Soft Film)	MIL-C-11796 Class III

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Cable assembly	32-34-11-04-105	LOM ALL
3	Cable assembly	32-34-11-04-100	LOM ALL
4	Cable assembly	32-34-11-04-095	LOM ALL
5	Cable assembly	32-34-11-04-105	LOM ALL
12	Pin	32-34-11-02-040	LOM ALL
15	Pin	32-34-11-04-005	LOM ALL

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

E. Manual Extension Cable Installation

SUBTASK 32-34-31-420-001

(1) Install the cable assembly [1] and the cable assembly [3] or the cable assembly [4] and the cable assembly [5], do this task: Control Cables Installation, TASK 20-10-91-400-801.

NOTE: The turnbuckles [2] are located at approximately body station 420.

(a) Apply a thin layer of compound, C00174 or compound, C00528 to the threads on the internal and external surfaces of the mating adjustable parts on the turnbuckles [2].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-34-31-420-002

(2) Install the cable assembly [1] or the cable assembly [5] on the quadrant assembly of the main landing gear extension mechanism.

(a) Install the pin [15].

SUBTASK 32-34-31-420-003

(3) Connect the cable assembly [3] or the cable assembly [4] on the control drum on the control mechanism.

(a) Install the bolt [13] that connects the cable assembly [3] or the cable assembly [4] to the control drum on the manual extension control mechanism.

SUBTASK 32-34-31-410-001

(4) Install the cable guard standoffs [9], washers [10], and nuts [11] on the control drum on the manual extension control mechanism.

SUBTASK 32-34-31-420-005

(5) Put the terminal end of the manual extension handle cable in its position on the MLGEA control drum.

(a) Attach the manual extension handle cable on the control drum of the control mechanism and install the pins [12].

(b) Bend one end of the pins [12] into the drum.

(c) Connect the cable assembly [1] to the cable assembly [3] or the cable assembly [4] to the cable assembly [5] at the turnbuckle [2].

F. Put the Airplane Back to its Usual Condition

SUBTASK 32-34-31-820-001

(1) Do the adjustment of the manual extension system for the main landing gear, do this task: Main Landing Gear Manual Extension System Adjustment and Test, TASK 32-34-00-820-801.

SUBTASK 32-34-31-710-001

(2) Do a test on the manual extension system for the main landing gear, do this task: Main Gear Manual Extension System Test - Airplane not on Jacks, TASK 32-34-00-730-802.

SUBTASK 32-34-31-420-007

(3) Install the pressure seal [14] on the wheel well ceiling of the main landing gear, do this task: Control Cable Half Ball Pressure Seal Installation, TASK 20-10-04-400-801.

SUBTASK 32-34-31-410-002

(4) Install the cargo compartment ceiling panels [6] at approximately body station 420.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR MANUAL EXTENSION SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure contains these three tasks:

(1) Nose landing gear manual extension system adjustment.

(2) System test of the manual extension system for the nose gear, with the airplane on jacks

(3) System test of the manual extension system for the nose gear, with the airplane not on jacks.

TASK 32-35-00-820-801

2. Nose Landing Gear Manual Extension System Adjustment

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-21-00-000-801	Passenger Cabin Floor Panel - Removal (P/B 401)
53-21-00-400-801	Passenger Cabin Floor Panel - Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Location Zones

Zone	Area
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
222	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Procedure

SUBTASK 32-35-00-860-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-35-00-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-35-00-580-001

(3) Install chocks around the tires of the main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-35-00-010-001

(4) Remove the screws [2] and cover [1] from the nose gear manual release mechanism (Detail A).

SUBTASK 32-35-00-980-001

(5) Align the rig pin holes on the nose gear manual release mechanism.

NOTE: Control cables may contact fairleads, grommets or rub strips after rigging at operating conditions. Refer to AMM Task 20-20-31-6 for control cable damage limits.

SUBTASK 32-35-00-480-001

(6) Install the rig pin LGEA1 from rigging pin kit, SPL-1585, through the quadrant and the side cover on the manual release mechanism.

SUBTASK 32-35-00-010-002

(7) Remove the cabin floor panel at approximately body station 270. To do this, do this task: Passenger Cabin Floor Panel - Removal, TASK 53-21-00-000-801.

SUBTASK 32-35-00-020-001

(8) Remove the turnbuckle locking clips from the cable MNGEA (Detail B).

SUBTASK 32-35-00-820-001

(9) Adjust the turnbuckle on cable MNGEA until the rig pin LGEA 1 fits freely in the manual extension mechanism.

NOTE: When you do this, make sure you correctly set the release handle in the V-slot of the manual extension control. When the cable tension is equal, rig pin 1 will fit freely in the manual extension mechanism.

SUBTASK 32-35-00-080-001

(10) Remove the rig pin LGEA1 from the nose gear manual extension mechanism.

SUBTASK 32-35-00-410-001

(11) Install the screws [2] and the cover [1] on the nose gear manual release mechanism.

SUBTASK 32-35-00-420-001

(12) Install the turnbuckle locking clips on the cable MNGEA.

SUBTASK 32-35-00-410-002

(13) Install the cabin floor panel at approximately body station 270. To do this, do this task: Passenger Cabin Floor Panel - Installation, TASK 53-21-00-400-801.

——— END OF TASK ———

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G27354 S0006575397_V2

Nose Gear Manual Extension System
Figure 501/32-35-00-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G27356 S0006575398_V3

Nose Gear Manual Extension System
Figure 501/32-35-00-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Manual Extension System
Figure 501/32-35-00-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-35-00-730-801

3. Nose Gear Manual Extension System Test - Airplane on Jacks

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) The normal extension/retraction system will not operate with the cover for the alternate extend T-handle open. Make sure that the cover is closed when you will extend or retract the landing gear with the landing gear control handle.

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
32-09-10-710-801	Proximity Switch Electronics Unit (PSEU) - Operational Test (P/B 501)
32-33-00-710-801	Operational Test for the Nose Landing Gear (P/B 501)

C. Tools/Equipment

Reference	Description
STD-5505	Spring Scale

D. Location Zones

Zone	Area
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Prepare for the Test

SUBTASK 32-35-00-480-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-35-00-580-004

(2) Do one of these tasks to lift the airplane nose:

- Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801
- Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

NOTE: If you lift the main gear with the jacks, it is not necessary to do more steps to put the airplane in air mode. The airplane will be in air mode if you lift the main landing gear off the ground.

SUBTASK 32-35-00-210-001

(3) Make sure that the manual extension release mechanism is free from contamination:

(a) Remove the screws [2] and cover [1] from the manual release mechanism.

(b) If it is necessary, remove all contaminations from the manual extension release mechanism.

(c) Install the cover [1] and screws [2] on the manual release mechanism.

SUBTASK 32-35-00-860-005

(4) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-35-00-860-006

(5) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-35-00-860-008

(6) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-35-00-010-003

(7) To get access to the P92 panel, open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-35-00-860-053

WARNING

WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING

DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(8) Open this circuit breaker and install safety tag:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-35-00-860-010

(9) Make sure that the control lever for the landing gear is in the DN position.

SUBTASK 32-35-00-860-011

(10) If you did not lift the main landing gear with the jacks, do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

SUBTASK 32-35-00-080-002

(11) For the nose gear, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

SUBTASK 32-35-00-860-012

(12) Move the No. 1 and No. 2 throttle levers to the full forward position.

G. Nose Gear Manual Extension System Test

SUBTASK 32-35-00-860-051

(1) Put the control lever for the landing gear to the OFF position.

SUBTASK 32-35-00-860-047

(2) Open the access door to the manual extension T-handles.

SUBTASK 32-35-00-700-001

(3) Pull the manual extension handle for the nose gear.

(a) Make sure that the full travel of the T-handle is at least 21.0 in. (533.4 mm) (View C, Figure 501).

SUBTASK 32-35-00-700-002

(4) Release the manual extension handle for the nose gear.

(a) Make sure that the handle returns to the stowed position without hesitation or binding.

SUBTASK 32-35-00-480-003

(5) Attach a spring scale, STD-5505, to the manual extension T-handle for the nose gear.

SUBTASK 32-35-00-730-002

(6) Pull the manual extension handle for the nose gear.

(a) Make sure that the load to start the T-handle from the seat has a minimum of 3.0 lbf (13.3 N) and a maximum of 7.0 lbf (31.1 N).

(b) Make sure that the load during the full travel of the T-handle is not more than 15.0 lbf (66.7 N).

NOTE: The T-handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

(c) Make sure that the manual extension mechanism operates freely.

SUBTASK 32-35-00-860-034

(7) Remove the spring scale, STD-5505, from the manual extension T-handle for the nose gear.

SUBTASK 32-35-00-860-026

(8) Make sure that the access door to the manual extension for the T-handle is closed.

NOTE: The extension retraction system will not operate with the access door to the manual extension for the alternate extend T-handle open.

SUBTASK 32-35-00-860-019

(9) Move the control lever for the landing gear to the DN position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-35-00-730-003

> **WARNING**
> MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE NOSE LANDING GEAR. FAST MOVEMENT OF THE NOSE LANDING GEAR CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(10) Move the control lever for the landing gear to the UP position and wait while the nose gear retracts.

SUBTASK 32-35-00-860-029

(11) Open the access door to the manual extension T-handles.

SUBTASK 32-35-00-730-006

(12) Pull the manual extension T-handle of the nose gear.

NOTE: The T-handle must be pulled upward and forward. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

SUBTASK 32-35-00-700-006

(13) Make sure that the nose gear free falls to the down and locked position.

(a) Make sure that the green light for the nose gear is on.

NOTE: The nose landing gear could require additional force to lock into the down position. It is allowed to apply 115 lbf (512 N) of force to the torsion link apex pin (The pin could be pushed or pulled) or 80 lbf (356 N) of force to the axle.

(b) Make sure that the red light for the nose gear is on.

NOTE: The red light for the nose gear will stay on to show that the landing gear control lever and landing gear positions disagree.

SUBTASK 32-35-00-700-007

(14) Release the manual extension handle for the nose gear.

SUBTASK 32-35-00-860-030

(15) Move the control lever for the landing gear to the DN position.

(a) Make sure that the red light for the nose gear is off.

SUBTASK 32-35-00-860-031

(16) Make sure that the cover for the T-handle is closed.

SUBTASK 32-35-00-730-008

(17) Make sure that persons and equipment are clear of the nose gear.

SUBTASK 32-35-00-730-007

(18) Move the control lever for the landing gear to the UP position and wait while the nose gear retracts.

SUBTASK 32-35-00-860-014

(19) Put the control lever to the OFF position.

SUBTASK 32-35-00-860-032

(20) Open the access door to the manual extension T-handles.

SUBTASK 32-35-00-820-003

(21) Attach a spring scale to the manual extension T-handle for the nose gear.

SUBTASK 32-35-00-730-004

(22) Pull the manual extension handle for the nose gear.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the maximum load when you pull the T-handle is not more than 40.0 lbf (177.9 N).

NOTE: The T-handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

SUBTASK 32-35-00-700-003

(23) Make sure that the nose gear free falls to the down and locked position.

(a) While the nose landing gear is in free fall, the red light should be on, and the green light should be off.

NOTE: The red light for the nose gear will stay on to show that the landing gear control lever and the landing gear positions disagree.

(b) When the nose landing gear locks into the down position the green light should be on and the red light should remain on.

NOTE: The nose landing gear could require additional force to lock into the down position. It is allowed to apply 115 lbf (512 N) of force to the torsion link apex pin (The pin could be pushed or pulled) or 80 lbf (356 N) of force to the axle.

(c) Move the landing gear control lever to the DN position.

1) Make sure that the red light for the nose gear is off.

SUBTASK 32-35-00-080-003

(24) Remove the spring scale, STD-5505, from the manual extension T-handle for the nose gear.

SUBTASK 32-35-00-860-033

(25) Close the access door to the manual extension T-handles.

SUBTASK 32-35-00-860-035

(26) Do this task: Operational Test for the Nose Landing Gear, TASK 32-33-00-710-801.

NOTE: Normal operation of the nose landing gear mechanism confirms that the release roller of the nose gear manual extension system has correctly reset to its retracted position.

SUBTASK 32-35-00-860-052

(27) As an alternative, you can do that steps below to make sure that the release roller of nose landing gear manual extension system has reset to its retracted position:

(a) Do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

(b) Open the access door to the manual extension T-handles.

(c) Pull the manual extension handle for the nose gear.

NOTE: One person needs to be stationed in the nose landing gear wheel well.

(d) Release the manual extension handle for the nose gear.

NOTE: Observe the manual extension mechanism to make sure that the release roller correctly resets to its retracted position.

(e) Make sure that the handle returns to the stowed position without hesitation or binding.

SUBTASK 32-35-00-860-039

(28) Close the access door to the manual extension T-handles.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-35-00-480-004

(1) For the nose gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-35-00-860-015

(2) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 32-35-00-860-028

(3) Move the No. 1 and No. 2 throttle levers to the idle (full aft) position.

SUBTASK 32-35-00-860-054

WARNING

WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING

DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(4) Remove the safety tag and close this circuit breaker:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

SUBTASK 32-35-00-410-003

(5) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-35-00-860-016

(6) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

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F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 32-35-00-200-001

(7) Check for the PSEU warning light.

(a) If it is illuminated, do this task: Proximity Switch Electronics Unit (PSEU) - Operational Test, TASK 32-09-10-710-801.

SUBTASK 32-35-00-860-017

(8) For Hydraulic System A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-35-00-580-003

(9) Do the applicable task:

(a) Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802

(b) Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

——— END OF TASK ———

TASK 32-35-00-730-802

4. Nose Gear Manual Extension System Test - Airplane Not on Jacks

(Figure 501)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

Reference	Description
STD-5505	Spring Scale

C. Location Zones

Zone	Area
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Prepare for the Test

SUBTASK 32-35-00-480-005

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-35-00-860-050

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-35-00-700-015

(3) Make sure that the manual extension release mechanism of the nose landing gear is free from contamination.

SUBTASK 32-35-00-860-020

(4) Make sure the hydraulic power is off. Do this task, if necessary: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-35-00-860-021

(5) Make sure the control lever for the landing gear is in the DN position.

E. Procedure

SUBTASK 32-35-00-860-022

(1) Put the control lever in the OFF position.

SUBTASK 32-35-00-860-048

(2) Open the access door to the manual extension T handles.

SUBTASK 32-35-00-700-004

(3) Pull the manual extension handle for the nose gear.

(a) Make sure the full travel of the T handle is at least 21.0 in. (533.4 mm) (Detail C).

SUBTASK 32-35-00-700-005

(4) Release the manual extension handle for the nose gear.

(a) Make sure the handle returns to the stowed position without hesitation or binding.

SUBTASK 32-35-00-480-006

(5) Attach a spring scale, STD-5505 to the manual extension T handle for the nose gear.

SUBTASK 32-35-00-730-005

(6) Pull the manual extension handle for the nose gear.

(a) Make sure the load to start the T handle from the seat has a minimum of 3.0 lbf (13.3 N) and a maximum of 7.0 lbf (31.1 N).

(b) Make sure the load during the full travel of the T handle is not more than 15.0 lbf (66.7 N).

NOTE: The T handle must be pulled upward and forward when you measure the load. This will simulate a person seated in the First Officer's seat. Do not pull the handle straight up.

(c) Make sure the manual extension mechanism operates freely.

SUBTASK 32-35-00-860-023

(7) Move the control lever for the landing gear to the DN position.

SUBTASK 32-35-00-080-004

(8) Remove the spring scale, STD-5505 from the manual extension T handle for the nose gear.

SUBTASK 32-35-00-860-037

(9) Pull the manual extension handle for the nose gear.

NOTE: One person needs to be stationed in the nose landing gear wheel well.

(10) Release the manual extension handle for the nose gear.

NOTE: Observe the manual extension mechanism to make sure the release roller correctly resets to its retracted position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure the handle returns to the stowed position without hesitation or binding.

SUBTASK 32-35-00-860-038

(11) Close the access door to the manual extension T handles.

F. Put the Airplane Back to its Usual Condition.

SUBTASK 32-35-00-860-025

(1) If electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR MANUAL EXTENSION RELEASE MECHANISM - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the manual extension release mechanism (referred to as the release assy [7] for the nose landing gear

(2) An installation of the manual extension release mechanism for the nose landing gear.

TASK 32-35-11-000-801

2. Nose Gear Manual Extension Release Mechanism Removal

(Figure 401)

A. References

Reference	Title
20-10-04-000-802	Control Cable Air Seal Removal (P/B 401)
53-21-00-000-801	Passenger Cabin Floor Panel - Removal (P/B 401)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Manual Extension Release Mechanism Removal

SUBTASK 32-35-11-010-001

(1) Remove the cabin floor panel to get access to the turnbuckle [1], do this task: Passenger Cabin Floor Panel - Removal, TASK 53-21-00-000-801.

SUBTASK 32-35-11-010-002

(2) Disconnect the MNGEA cable assembly [2] at the turnbuckle [1].

SUBTASK 32-35-11-020-001

(3) Remove the nut [5], washer [4], bolt [3]. This will permit you to move the pulley [15] when you remove the MNGEA cable assembly [2] that is attached to the release assembly [7].

SUBTASK 32-35-11-020-002

(4) Remove the nuts [10], washers [9], and bolts [8], bolts [11], bolt [12] which attach the release assembly [7] to the wheel well ceiling.

NOTE: bolt [12] is removed from inside the aircraft.

SUBTASK 32-35-11-020-003

(5) Remove the release assembly [7] from the wheel well ceiling.

SUBTASK 32-35-11-020-004

(6) Remove the seal [6] from the ceiling of the nose wheel well, do this task: Control Cable Air Seal Removal, TASK 20-10-04-000-802.

SUBTASK 32-35-11-020-005

(7) Remove the release assembly [7], with the cable MNGEA, from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Landing Gear Manual Extension Release Mechanism Installation
Figure 401/32-35-11-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(VIEW FROM NOSE LANDING GEAR WHEEL WELL)

C

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Nose Landing Gear Manual Extension Release Mechanism Installation
Figure 401/32-35-11-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-35-11-400-801

3. Nose Gear Manual Extension Release Mechanism Installation

(Figure 401)

A. References

Reference	Title
20-10-04-400-802	Control Cable Air Seal Installation (P/B 401)
20-10-91-400-801	Control Cables Installation (P/B 401)
32-35-00-730-801	Nose Gear Manual Extension System Test - Airplane on Jacks (P/B 501)
32-35-00-820-801	Nose Landing Gear Manual Extension System Adjustment (P/B 501)
53-21-00-400-801	Passenger Cabin Floor Panel - Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
C00174	Compound - Corrosion Preventive, Solvent Cutback, Cold Application	MIL-PRF-16173 (Supersedes MIL-C-16173)
C00528	Compound - Corrosion Preventive, Petroleum Hot Application (Soft Film)	MIL-C-11796 Class III

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Cable assembly	32-35-11-01-155	LOM ALL
6	Seal	32-35-11-01-040	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Manual Extension Release Mechanism Installation

SUBTASK 32-35-11-100-001

(1) Clean the surface where the release assembly [7] will contact the ceiling of the nose wheel well.

SUBTASK 32-35-11-600-001

(2) Apply sealant, A00247 to the entire top surface of the release assembly [7] to fay seal where it will contact the ceiling of the nose wheel well.

SUBTASK 32-35-11-420-001

(3) Install the MNGEA cable assembly [2], do this task: Control Cables Installation, TASK 20-10-91-400-801.

NOTE: The turnbuckle [1] is located at approximately body station 270.

(a) Apply a thin layer of compound, C00174 or compound, C00528 to the threads on the internal and external surfaces of the mating adjustable parts on the turnbuckle [1].

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SUBTASK 32-35-11-420-002

(4) Install the bolt [3], washer [4] and nut [5] to attach the pulley [15], with the MNGEA cable assembly [2] installed, to the bracket.

SUBTASK 32-35-11-420-003

(5) Install the seal [6] on the ceiling of the nose wheel well, do this task: Control Cable Air Seal Installation, TASK 20-10-04-400-802.

SUBTASK 32-35-11-420-004

(6) Put the release assembly [7] in its position on the wheel well ceiling.

SUBTASK 32-35-11-600-002

(7) Apply sealant, A00247 to the bolts [8], bolts [11], bolt [12], washers [9] and nuts [10].

SUBTASK 32-35-11-420-005

(8) Install the bolts [8], bolts [11], bolt [12], washers [9] and nuts [10] to attach the release assembly [7] to the wheel well ceiling.

NOTE: bolt [12] is installed from inside the aircraft.

SUBTASK 32-35-11-420-006

(9) Connect the MNGEA cable assembly [2] at the turnbuckle [1].

SUBTASK 32-35-11-410-001

(10) Do this task: Passenger Cabin Floor Panel - Installation, TASK 53-21-00-400-801.

SUBTASK 32-35-11-820-001

(11) Do this task: Nose Landing Gear Manual Extension System Adjustment, TASK 32-35-00-820-801.

SUBTASK 32-35-11-710-001

(12) Do a test on the manual extension system, do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, TASK 32-35-00-730-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR MANUAL EXTENSION SPRING - REMOVAL/INSTALLATION

1. General

A. This procedure these tasks:

(1) A removal of the nose landing gear manual extension spring.

(2) An installation of the nose landing gear manual extension spring.

TASK 32-35-20-000-801

2. Nose Gear Manual Extension Spring Removal

Figure 401

A. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

B. Manual Extension Spring Removal

SUBTASK 32-35-20-010-001

(1) Remove screws [3] and cover [2] from the housing assembly [1].

SUBTASK 32-35-20-000-001

(2) Remove cotter pins [4], the washers [5], and the guard pins [6] from the housing assembly [1].

SUBTASK 32-35-20-000-002

(3) Pull follower arm [9] away from the cam assembly [8] to remove the spring [7] preload.

SUBTASK 32-35-20-000-003

(4) Remove cotter pin [10], the pin [11], the washer [12], and the spacer [13].

SUBTASK 32-35-20-000-004

(5) Remove the cotter pin [14], the nut [15], the washer, [16], and the bolt [17].

SUBTASK 32-35-20-020-001

(6) Remove the cam assembly [8] with the spring [7].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NLG MANUAL RELEASE MECHANISM
(VIEW IN THE UP DIRECTION)

A

1448160 S0000262664_V2

Nose Gear Manual Extension Spring - Removal/Installation
Figure 401/32-35-20-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1448743 S0000262665_V2

Nose Gear Manual Extension Spring - Removal/Installation
Figure 401/32-35-20-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-35-20-400-801

3. Nose Gear Manual Extension Spring Installation

Figure 401

A. References

Reference	Title
32-35-00 P/B 501	NOSE GEAR MANUAL EXTENSION SYSTEM - ADJUSTMENT/TEST

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Manual Extension Spring Installation

SUBTASK 32-35-20-420-001

(1) Install the cam assembly [8] with the spring [7] into the housing assembly [1].

SUBTASK 32-35-20-400-001

(2) Install the bolt [17], the washer [16], the nut [15] and the cotter pin [14].

SUBTASK 32-35-20-400-002

(3) Install one end of the spring [7] onto the housing assembly [1] with the pin [11], the spacer [13, the washer [12] and the cotter pin [10].

SUBTASK 32-35-20-400-003

(4) Install the guard pins [6], the washers [5], and the cotter pins [4] onto the housing assembly [1].

SUBTASK 32-35-20-700-002

(5) Do a check of the spring [7]:

(a) Verify that the full range of motion is possible when pulling the cable.

(b) Make sure that the spring [7] fully returns the cam to the initial position when the cable is released.

(c) Make sure that the spring [7] is not solid when the cable is fully pulled out.

SUBTASK 32-35-20-410-001

(6) Install the cover [2] with the screws [3] onto the housing assembly [1].

SUBTASK 32-35-20-700-001

(7) Do a test of the nose landing gear manual release, do this task:NOSE GEAR MANUAL EXTENSION SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 32-35-00/501.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR MANUAL EXTENSION SYSTEM CABLES - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the manual extension system cables for the nose landing gear

(2) An installation of the manual extension system cables for the nose landing gear.

TASK 32-35-21-000-801

2. Nose Gear Manual Extension System Cables Removal

(Figure 401)

A. References

Reference	Title
20-10-04-000-802	Control Cable Air Seal Removal (P/B 401)
20-10-91-000-801	Control Cables Removal (P/B 401)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-21-00-000-801	Passenger Cabin Floor Panel - Removal (P/B 401)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

C. Access Panels

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

D. Manual Extension Cable Removal

SUBTASK 32-35-21-010-001

(1) Remove the cabin floor panel [1], to get access to the pulley on the Nose Landing Gear (NLG) release mechanism. To do this, do this task: Passenger Cabin Floor Panel - Removal, TASK 53-21-00-000-801.

SUBTASK 32-35-21-010-005

(2) Remove the flight deck floor panel [18] to get access to the turnbuckle [2].

SUBTASK 32-35-21-020-007

(3) Disconnect the MNGEA cable B [16] and the MNGEA cable A [3] at the turnbuckle [2].

SUBTASK 32-35-21-020-008

(4) Remove the nut [6], washer [5], and bolt [4] that attaches the pulley for the MNGEA cable A [3] to the bracket.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-35-21-010-002

(5) Remove this access panel from the ceiling of the nose wheel well:

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

SUBTASK 32-35-21-020-001

(6) Remove the pin [15] to disconnect the nose gear manual extension handle cable from the MNGEA control drum on the manual extension control mechanism.

SUBTASK 32-35-21-020-002

(7) Open the manual extension access door and remove the handle assembly [14].

NOTE: The handle assembly [14] includes the nose gear manual extension handle and cable.

SUBTASK 32-35-21-020-003

(8) Remove the cable retainer bolt [17] and disconnect the MNGEA cable B [16] from the MNGEA control drum on the manual extension control mechanism.

SUBTASK 32-35-21-010-003

(9) Remove the screws [10] and the cover [9] from the NLG manual release mechanism.

SUBTASK 32-35-21-010-004

(10) Remove the pins [12], washers [13], and guide pins [11] from the NLG manual release mechanism to give clearance for cable removal.

SUBTASK 32-35-21-020-005

(11) Remove the pressure seal [7] on the ceiling of the nose wheel well. To do this, do this task: Control Cable Air Seal Removal, TASK 20-10-04-000-802.

SUBTASK 32-35-21-020-006

(12) Remove the pin [8] and disconnect the MNGEA cable A [3] from the quadrant on the NLG manual release mechanism.

SUBTASK 32-35-21-000-001

(13) Remove the MNGEA cable B [16], do this task: Control Cables Removal, TASK 20-10-91-000-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Manual Extension System Cable Installation
Figure 401/32-35-21-990-801 (Sheet 1 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

(VIEW IN THE UP DIRECTION)

C

G05501 S0006575411_V2

Nose Gear Manual Extension System Cable Installation
Figure 401/32-35-21-990-801 (Sheet 2 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G05503 S0006575412_V2

Nose Gear Manual Extension System Cable Installation
Figure 401/32-35-21-990-801 (Sheet 3 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2018580 S0000398684_V2

Nose Gear Manual Extension System Cable Installation
Figure 401/32-35-21-990-801 (Sheet 4 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Manual Extension System Cable Installation
Figure 401/32-35-21-990-801 (Sheet 5 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLES A AND B

CABLE NAME	FUNCTION	NO. REQ	LENGTH (INCHES)	CABLE SIZE	FITTINGS	
					1	2
A	MNGEA	1	38.2	3/32 7x7	BACT14A3	MS21260S3(RH)
B	MNGEA	1	21.7	3/32 7x7	BACT14A3	MS21260S3(LH)

MATERIAL: CABLE A - CORROSION RESISTANT STEEL PER BMS 7-265, TYPE I, COMPOSITION B

CABLE B - CARBON STEEL PER BMS 7-265, TYPE I, COMPOSITION A (ZINC COATING) OR COMPOSITION A (TZ) (TIN OVER ZINC COATING)

G05523 S0006575414_V5

Nose Gear Manual Extension System Cable Installation
Figure 401/32-35-21-990-801 (Sheet 6 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(VIEW FROM NOSE LANDING GEAR WHEEL WHEEL)

H

K03090 S0006575415_V2

Nose Gear Manual Extension System Cable Installation
Figure 401/32-35-21-990-801 (Sheet 7 of 7)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-35-21-400-801

3. **Nose Gear Manual Extension System Cables Installation**

(Figure 401)

A. **References**

Reference	Title
20-10-04-400-802	Control Cable Air Seal Installation (P/B 401)
20-10-91-400-801	Control Cables Installation (P/B 401)
32-35-00-730-801	Nose Gear Manual Extension System Test - Airplane on Jacks (P/B 501)
32-35-00-820-801	Nose Landing Gear Manual Extension System Adjustment (P/B 501)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)
53-21-00-400-801	Passenger Cabin Floor Panel - Installation (P/B 401)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1553	Tensiometer - Cable, Low Tension (200 lbs and below) Part #: 102-03108 Supplier: 21844 Part #: 102-03120 Supplier: 21844 Part #: ACM-200 Supplier: 13331 Part #: ACX-250-1 Supplier: 13331 Part #: T60-1001-C8-1A Supplier: 0N8U4
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
C00174	Compound - Corrosion Preventive, Solvent Cutback, Cold Application	MIL-PRF-16173 (Supersedes MIL-C-16173)
C00528	Compound - Corrosion Preventive, Petroleum Hot Application (Soft Film)	MIL-C-11796 Class III

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	MNGEA cable A	32-35-11-01-155	LOM ALL
8	Pin	32-35-11-01-150	LOM ALL
12	Pin	32-35-11-01-170	LOM ALL
15	Pin	32-34-11-02-040	LOM ALL
16	MNGEA cable B	32-34-11-04-090	LOM ALL

E. **Location Zones**

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Zone	Area
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

F. Access Panels

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

G. Manual Extension Cable Installation

SUBTASK 32-35-21-420-001

(1) Install the MNGEA cable B [16], do this task: Control Cables Installation, TASK 20-10-91-400-801.

NOTE: The turnbuckle [2] is located at approximately body station 270.

SUBTASK 32-35-21-420-009

(2) Apply a thin layer of compound, C00174 or compound, C00528 to the threads on the internal and external surfaces of the mating adjustable parts on the turnbuckle [2].

SUBTASK 32-35-21-420-002

(3) Install the bolt [4], washer [5], and nut [6] to attach the pulley, with the MNGEA cable A [3] installed, to the bracket.

SUBTASK 32-35-21-480-001

(4) Install the rig pin LGEA1 from rigging pin kit, SPL-1585 in the Nose Landing Gear (NLG) manual release mechanism.

SUBTASK 32-35-21-420-003

(5) Install the MNGEA cable A [3] on the quadrant on the NLG manual release mechanism.

(a) Install the pin [8] to attach the cable to the quadrant.

SUBTASK 32-35-21-420-004

(6) Install the pressure seal [7] on the ceiling of the nose wheel well, do this task: Control Cable Air Seal Installation, TASK 20-10-04-400-802.

SUBTASK 32-35-21-410-001

(7) Install the guide pins [11], washers [13], and pins [12] on the NLG manual release mechanism.

SUBTASK 32-35-21-410-002

(8) Install the screws [10] and the cover [9] on the NLG manual release mechanism.

SUBTASK 32-35-21-420-006

(9) Attach the MNGEA cable B [16] on the control drum on the control mechanism.

(a) Install the cable retainer bolt [17] that connects the MNGEA cable B [16] to the control drum on the manual extension control mechanism.

SUBTASK 32-35-21-420-007

(10) Put the terminal end of the handle assembly [14] through the hole in the V-slot on the control drum.

(a) Attach the nose gear manual extension handle cable on the control drum of the control mechanism and install the pin [15].

(b) Bend one end of the pin [15] into the drum.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-35-21-420-008

(11) Connect the MNGEA cable A [3] and the MNGEA cable B [16] at the turnbuckle [2].

SUBTASK 32-35-21-820-001

(12) Use the low tension cable tensiometer, COM-1553 to adjust the tension in the MNGEA cable to 100 lbf (444.8 N). Make sure there are the equal threads of the cable threaded ends engaged in the turnbuckle [2]. Hold this tension for at least 3 minutes.

SUBTASK 32-35-21-820-002

(13) Reduce the tension in the MNGEA cable until you can easily remove the rig pin LGEA1 from rigging pin kit, SPL-1585 from the NLG manual release mechanism.

SUBTASK 32-35-21-080-001

(14) Remove the rig pin LGEA1 from rigging pin kit, SPL-1585 from the NLG manual release mechanism.

H. Put the Airplane Back to its Usual Condition

SUBTASK 32-35-21-820-003

(1) Do this task: Nose Landing Gear Manual Extension System Adjustment, TASK 32-35-00-820-801.

SUBTASK 32-35-21-710-001

(2) Do a test on the manual extension system for the NLG, do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, TASK 32-35-00-730-801.

SUBTASK 32-35-21-410-004

(3) Close this access panel:

Number	Name/Location
114AC	Fwd Nose Wheel Well Upper Access Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

SUBTASK 32-35-21-410-005

(4) Install the flight deck floor panel [18].

SUBTASK 32-35-21-410-003

(5) Install the cabin floor panel [1] at approximately body station 270, do this task: Passenger Cabin Floor Panel - Installation, TASK 53-21-00-400-801.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1. General

A. This procedure has these tasks:

(1) Bleed the brake system upstream of the antiskid valves.

NOTE: Use this procedure when a brake system component upstream of the antiskid valves is removed or replaced. This procedure will not remove the air that may be in the system downstream of the antiskid valves.

(2) Bleed the normal (System B) hydraulic brake system.

NOTE: Use this procedure when an antiskid valve, or a component downstream of an antiskid valve in the normal brake system is removed or replaced. This procedure can also be used if there are signs of air in the brake system. This will be shown by slow brake response or chattering.

(3) Bleed the alternate (System A) hydraulic brake system.

NOTE: Use this procedure when an antiskid valve, or a component downstream of an antiskid valve in the alternate brake system is removed or replaced. This procedure can also be used in there are signs of air in the brake system. This will be shown by slow brake response or chattering.

(4) A test of the normal hydraulic system brake fuses (System B).

(5) A test of the alternate hydraulic system brake fuses (System A).

(6) It is not usually necessary to bleed the brakes during a routine brake replacement since the hydraulic disconnect fitting at the brake prevents air from getting into the brakes.

B. When you bleed the hydraulic systems, the hydraulic fuses can set. You can reset the fuses one of these two ways:

(1) You can use the fuse bypass lever on each fuse to reset the fuse.

(2) Or, you can release and reset the parking brake to reset the fuse.

TASK 32-41-00-870-801

2. Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves

A. General

(1) This task has instructions to bleed the brake system upstream of the antiskid valves. When the system is bled, the air in the brake lines or a component of the brake system is sent through the brake metering valves to the hydraulic reservoir by the return lines.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Bleed the Hydraulic Brake System Upstream of the Antiskid Valves

SUBTASK 32-41-00-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-480-002

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-41-00-790-001

> **WARNING** KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-00-480-003

(4) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-860-001

(5) Release the parking brake.

SUBTASK 32-41-00-840-001

(6) Do the steps that follow to bleed the normal brake system through the normal brake metering valves to return:

(a) Push the brake pedals slowly through approximately one-half of their total travel and slowly release them.

NOTE: Repeat this step several times.

(b) Push both of the brake pedals fully to the stops and hold them there for 2 to 4 seconds and then release them.

NOTE: Repeat this step 5 more times.

(c) Make sure the brakes apply when you push on the brakes.

(d) Push the brake pedals fully to the stops and set the parking brake.

SUBTASK 32-41-00-860-002

(7) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-00-790-002

> **WARNING** KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(8) For the alternate (System A) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-00-840-002

(9) Do the steps that follow to bleed the alternate brake system through the alternate brake metering valves to return:

(a) Push the brake pedals slowly through approximately one-half of their total travel and slowly release them.

NOTE: Repeat this step several times.

(b) Push both of the brake pedals fully to the stops and hold them there for 2 to 4 seconds and then release them.

NOTE: Repeat this step 5 more times.

(c) Make sure the brakes apply when you push on the brakes.

(d) Push the brake pedals fully to the stops and set the parking brake.

SUBTASK 32-41-00-860-003

(10) For the alternate (System A) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

TASK 32-41-00-870-802

3. Normal (System B) Hydraulic Brake System - Bleeding

(Figure 201, Figure 202)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-15035	Bleeder Hose, Brake Part #: J29006-1 Supplier: 81205 Opt Part #: J32096-1 Supplier: 81205
STD-1055	Container - Oil Resistant, 5 Gallon (19 Liter)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Normal (System B) Hydraulic Brake System Bleeding

SUBTASK 32-41-00-480-004

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-480-005

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-860-004

(3) Release the parking brake.

E. Normal (System B) Hydraulic Brake System Bleeding

SUBTASK 32-41-00-710-001

(1) To prepare to bleed the normal (System B) hydraulic brake system, do these steps:

> **WARNING** KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Use the hydraulic service cart to pressurize the normal (System B) hydraulic system to 800 psig (5516 kPa).

NOTE: We recommend that you use the hydraulic service cart because of the large volume of hydraulic fluid this procedure removes from the normal hydraulic system.

NOTE: If you use the airplane's hydraulic supply, monitor the quantity of hydraulic fluid in the reservoir when you bleed the system.

1) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Push the brake pedals slowly through approximately one-half of their total travel and slowly release them.

NOTE: Repeat this step several times to remove the air from the brake lines upstream of the antiskid valves.

(c) Push the two brake pedals fully to the stops and hold them there for 2 to 4 seconds and then release them.

NOTE: Repeat this step 5 more times.

(d) Push the brake pedals fully to the stops and set the parking brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-00-710-002

(2) To bleed the air from each brake, do these steps for all four brakes (Figure 201):

NOTE: We recommend you do all of the steps below for one brake before you start the steps again for the next brake.

NOTE: There are two bleed valves on each brake, use the bleed valve to which you can get easy access.

(a) Remove the screw [2] and washer from the center of the bleed valve [1].

(b) If installed, remove the lockwire from the bleed valve [1].

(c) Install the bleeder hose, SPL-15035, on the end of the bleed valve [1].

(d) Put the free end of the bleeder hose, SPL-15035, into an oil resistant container (5 gal)(19 Liter), STD-1055.

(e) Slowly loosen the bleed valve [1] about one half turn.

NOTE: This will let hydraulic fluid flow out of the bleeder hose, SPL-15035.

(f) Let hydraulic fluid flow out of the bleeder hose, SPL-15035, until there are no air bubbles in the flow of hydraulic fluid.

NOTE: The fluid can flow out of the hose very quickly and intermittently.

(g) If the fluid flow stops, the brake fuse has set, to reset the fuse, do the steps that follow:

1) Close the bleed valve [1].

2) Do one of the steps that follow to reset the fuse:

a) On the normal system fuse for the brake being bled, pull the fuse bypass lever and hold it in this bypass position for 5 seconds minimum (Figure 202).

b) Or, release the parking brake until the fuse resets, then reset the parking brake.

(h) Open the bleed valve [1] and continue to bleed the brake until there are no air bubbles in the flow of hydraulic fluid.

(i) If you will not bleed the alternate (System A) hydraulic system, do the steps that follow:

1) Remove the bleeder hose, SPL-15035, from the bleed valve [1].

LOM 404 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

2) Tighten the bleed valve [1] to 45 in-lb (5.1 N·m).

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

3) Tighten the bleed valve [1] to 60 ±15 in-lb (6.8 ±1.7 N·m).

LOM 411, 416, 450, 465-999; LOM 402, 404, 406, 407, 420, 422, 425, 433, 434, 437, 438, 440, 442-447, 451-463 POST SB 737-32-1441; LOM 427, 428 POST SB 737-32-1441 AND PRE SB 737-32-1494

4) Tighten the bleed valve [1] to 34 ±1 in-lb (3.84 ±0.15 N·m).

LOM 422, 425, 426, 429-431, 433, 434, 440, 442-447, 451-457, 461-463; LOM 402, 404, 406, 407, 411, 416, 420, 437, 438, 450, 458-460, 465-999 POST SB 737-32-1429; LOM 427, 428 PRE SB 737-32-1494

5) Tighten the bleed valve [1] to 60.19 ±6.02 in-lb (6.8 ±0.7 N·m).

LOM ALL

6) Install the washer and the screw [2] in the center of the bleed valve [1].

7) If previously installed, install a lockwire on the bleed valve [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-00-870-001

(3) Release the brake pedals or the parking brake if it is set.

SUBTASK 32-41-00-870-002

(4) Make sure that all of the normal (System B) hydraulic fuses are not set.

(a) Operate the brake pedals several times.

(b) Look for movement of the brake wear indicator pins to make sure that all of the brakes operate.

SUBTASK 32-41-00-860-005

(5) Remove the external hydraulic pressure for the normal (System B) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-00-870-003

(6) Make sure that the fluid in the normal (System B) hydraulic reservoir is at the correct level, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

(a) If the normal (System B) hydraulic reservoir needs to be filled, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

A

F71384 S0006575421_V2

Brake Hydro-Mechanical Control System - Bleeding
Figure 201/32-41-00-990-805 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS EQUIVALENT)

A

3034080 S0000804200_V1

Brake Hydro-Mechanical Control System - Bleeding
Figure 201/32-41-00-990-805 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F71464 S0006575423_V3

Brake Hydro-Mechanical Control System - Fuse Locations
Figure 202/32-41-00-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(RIGHT SIDE)

B

F72588 S0006575424_V2

Brake Hydro-Mechanical Control System - Fuse Locations
Figure 202/32-41-00-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-00-870-803

4. Alternate (System A) Hydraulic Brake System - Bleeding

(Figure 201, Figure 202)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-15035	Bleeder Hose, Brake Part #: J29006-1 Supplier: 81205 Opt Part #: J32096-1 Supplier: 81205
STD-1055	Container - Oil Resistant, 5 Gallon (19 Liter)

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Alternate (System A) Hydraulic Brake System Bleeding

SUBTASK 32-41-00-480-006

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-480-007

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-860-006

(3) Release the parking brake.

E. Alternate (System A) Hydraulic Brake System Bleeding

SUBTASK 32-41-00-710-003

(1) To prepare to bleed the alternate (System A) hydraulic brake system, do these steps:

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WARNING KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Use the hydraulic service cart to pressurize the alternate (System A) hydraulic system to 800 psig (5516 kPa). Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

NOTE: We recommend that you use the hydraulic service cart because of the large volume of hydraulic fluid this procedure removes from the alternate hydraulic system.

NOTE: If you use the airplane's hydraulic supply, monitor the quantity of hydraulic fluid in the reservoir when you bleed the system.

(b) Push the brake pedals slowly through approximately one-half of their total travel and slowly release them.

NOTE: Repeat this step several times to remove the air from the brake lines upstream of the antiskid valve.

(c) Push the two brake pedals fully to the stops and hold them there for 2 to 4 seconds and then release them.

NOTE: Repeat this step 5 more times.

(d) Push the brake pedals fully to the stops and set the parking brake.

SUBTASK 32-41-00-710-004

(2) To bleed the air from each brake, do these steps for all four brakes (Figure 201):

NOTE: We recommend you do all of the steps below for one brake before you start the steps again for the next brake.

NOTE: There are two bleed valves on each brake, use the bleed valve to which you can get easy access.

(a) Remove the screw [2] and washer from the center of the bleed valve [1].

(b) Remove the lockwire, if installed, from the bleed valve [1].

(c) Install the bleeder hose, SPL-15035, on the end of the bleed valve [1].

(d) Put the free end of the bleeder hose, SPL-15035, into an oil resistant container (5 gal)(19 Liter), STD-1055.

(e) Slowly loosen the bleed valve [1] about one half turn.

NOTE: This will let hydraulic fluid flow out of the bleeder hose, SPL-15035.

(f) Let hydraulic fluid flow out of the bleeder hose, SPL-15035, until there are no air bubbles in the flow of hydraulic fluid.

NOTE: The fluid can flow out of the hose very quickly and intermittently.

(g) If the fluid flow stops, the brake fuse has set, to reset the fuse, do the steps that follow:

1) Close the bleed valve [1].

2) Do one of the steps that follow to reset the fuse:

a) On the alternate system fuse for the landing gear brake pair being bled, pull the fuse bypass lever and hold it in this bypass position for 5 seconds minimum (Figure 201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

b) Or, release the parking brake until the fuse resets, then reset the parking brake.

(h) Open the bleed valve [1] and continue to bleed the brake until there are no air bubbles in the flow of hydraulic fluid.

(i) If you will not bleed the normal (System B) hydraulic system, do the steps that follow:

1) Remove the bleeder hose, SPL-15035, from the bleed valve [1].

LOM 404 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

2) Tighten the bleed valve [1] to 45 in-lb (5.1 N·m).

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

3) Tighten the bleed valve [1] to 60 ±15 in-lb (6.8 ±1.7 N·m).

LOM 411, 416, 450, 465-999; LOM 402, 404, 406, 407, 420, 422, 425, 433, 434, 437, 438, 440, 442-447, 451-463 POST SB 737-32-1441; LOM 427, 428 POST SB 737-32-1441 AND PRE SB 737-32-1494

4) Tighten the bleed valve [1] to 34 ±1 in-lb (3.84 ±0.15 N·m).

LOM 422, 425, 426, 429-431, 433, 434, 440, 442-447, 451-457, 461-463; LOM 402, 404, 406, 407, 411, 416, 420, 437, 438, 450, 458-460, 465-999 POST SB 737-32-1429; LOM 427, 428 PRE SB 737-32-1494

5) Tighten the bleed valve [1] to 60.19 ±6.02 in-lb (6.8 ±0.7 N·m).

LOM ALL

6) Install the washer and screw [2] in the center of the bleed valve [1].

7) Install a lockwire, if previously installed, on the bleed valve [1].

SUBTASK 32-41-00-870-004

(3) Release the brake pedals or the parking brake if it is set.

SUBTASK 32-41-00-870-005

(4) Make sure that all of the alternate (System A) hydraulic fuses are not set.

(a) Operate the brake pedals several times.

(b) Look for movement of the brake wear indicator pins to make sure that all of the brakes operate.

SUBTASK 32-41-00-860-007

(5) Remove the external hydraulic pressure for the alternate (System A) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-00-870-006

(6) Make sure that the fluid in the alternate (System A) hydraulic reservoir is at the correct level, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

TASK 32-41-00-870-804

5. Normal (System B) Hydraulic System Brake Fuse Test

(Figure 201, Figure 202)

A. General

(1) This task provides instructions to test each hydraulic brake fuse for the normal hydraulic brake system. There is one fuse for each brake for the normal hydraulic system. Each fuse must pass a specific quantity of hydraulic fluid before it closes. For this task, each brake for the main landing gear must be bled to check the fuse for that brake.

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B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-15035	Bleeder Hose, Brake Part #: J29006-1 Supplier: 81205 Opt Part #: J32096-1 Supplier: 81205
STD-1055	Container - Oil Resistant, 5 Gallon (19 Liter)

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Normal Brake System Fuse Test

SUBTASK 32-41-00-480-008

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-860-008

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-00-860-009

WARNING	KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) Use the hydraulic service cart to pressurize the normal (System B) hydraulic system to 800 psig (5516 kPa), do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

NOTE: We recommend that you use the hydraulic service cart because of the large volume of hydraulic fluid this procedure removes from the normal hydraulic system.

NOTE: If you use the airplane's hydraulic supply, monitor the quantity of hydraulic fluid in the reservoir when you bleed the system.

SUBTASK 32-41-00-480-009

(4) Set the parking brake.

SUBTASK 32-41-00-480-010

(5) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-710-005

(6) To do a check of the fuse for each brake, do these steps for all four brakes:

(a) Remove the screw [2] from the center of the bleed valve [1].

(b) Remove the lockwire, if installed, from the bleed valve [1].

(c) Install the bleeder hose, SPL-15035, on the end of the bleed valve [1].

(d) Put the free end of the bleeder hose, SPL-15035, into an oil resistant container (5 gal)(19 Liter), STD-1055.

(e) Slowly loosen the bleed valve [1] about one half turn.

NOTE: This will let hydraulic fluid flow out of the bleeder hose, SPL-15035.

(f) Let the hydraulic fluid flow until the fuse closes and the flow stops.

(g) Make sure that the quantity collected in the oil resistant container (5 gal)(19 Liter), STD-1055 is 0.26 gal (0.98 l) - 0.41 gal (1.55 l).

(h) Close the bleed valve [1].

(i) Remove the bleeder hose, SPL-15035, from the bleed valve [1].

LOM 404 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

(j) Tighten the bleed valve [1] to 45 in-lb (5.1 N·m).

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

(k) Tighten the bleed valve [1] to 60 ±15 in-lb (6.8 ±1.7 N·m).

LOM 411, 416, 450, 465-999; LOM 402, 404, 406, 407, 420, 422, 425, 433, 434, 437, 438, 440, 442-447, 451-463 POST SB 737-32-1441; LOM 427, 428 POST SB 737-32-1441 AND PRE SB 737-32-1494

(l) Tighten the bleed valve [1] to 34 ±1 in-lb (3.84 ±0.15 N·m).

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LOM 422, 425, 426, 429-431, 433, 434, 440, 442-447, 451-457, 461-463; LOM 402, 404, 406, 407, 411, 416, 420, 437, 438, 450, 458-460, 465-999 POST SB 737-32-1429; LOM 427, 428 PRE SB 737-32-1494

(m) Tighten the bleed valve [1] to 60.19 ±6.02 in-lb (6.8 ±0.7 N·m).

LOM ALL

(n) Install the screw [2] in the center of the bleed valve [1].

(o) Install a lockwire, if previously installed, on the bleed valve [1].

(p) On the normal system fuse for the brake being bled, pull the fuse bypass lever and hold it in this bypass position for 5 seconds minimum.

SUBTASK 32-41-00-870-007

(7) Do these steps that follow when you have checked all of the fuses for the normal (System B) hydraulic system:

(a) Make sure that all of the normal (System B) hydraulic fuses are not set.

1) Operate the brake pedals several times.

2) Look for movement of the brake wear indicator pins to make sure all of the brakes operate.

(b) Remove the external hydraulic pressure for the normal (System B) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(c) Make sure the fluid in the normal (System B) hydraulic reservoir is at the correct level, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

(d) If the normal (System B) hydraulic reservoir needs to be filled, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

——— END OF TASK ———

TASK 32-41-00-870-805

6. Alternate (System A) Hydraulic System Brake Fuse Test

(Figure 201, Figure 202)

A. General

(1) This task provides instructions to test each hydraulic brake fuse for the alternate hydraulic brake system. There is one fuse for the two brakes on each main landing gear for the alternate hydraulic system. Each fuse must pass a specific quantity of hydraulic fluid before it closes. For this task, only one brake for the each main landing gear must be bled to check the fuse for that brake.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Reference	Description
SPL-15035	Bleeder Hose, Brake Part #: J29006-1 Supplier: 81205 Opt Part #: J32096-1 Supplier: 81205
STD-1055	Container - Oil Resistant, 5 Gallon (19 Liter)

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Alternate Brake System Fuse Test

SUBTASK 32-41-00-480-011

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-860-010

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-41-00-860-011

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) Use the hydraulic service cart to pressurize the alternate (System A) hydraulic system to 800 psig (5516 kPa), do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

NOTE: We recommend that you use the hydraulic service cart because of the large volume of hydraulic fluid this procedure removes from the alternate hydraulic system.

NOTE: If you use the airplane's hydraulic supply, monitor the quantity of hydraulic fluid in the reservoir when you bleed the system.

SUBTASK 32-41-00-480-012

(4) Set the parking brake.

SUBTASK 32-41-00-480-013

(5) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-710-006

(6) To do a check of the fuse for both brakes on each main landing gear, do these steps for one brake on each main landing gear:

(a) Remove the screw [2] from the center of the bleed valve [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the lockwire, if installed, from the bleed valve [1].

(c) Install the bleeder hose, SPL-15035, on the end of the bleed valve [1].

(d) Put the free end of the bleeder hose, SPL-15035, into an oil resistant container (5 gal)(19 Liter), STD-1055.

(e) Slowly loosen the bleed valve [1] about one half turn.

NOTE: This will let hydraulic fluid flow out of the bleeder hose, SPL-15035.

(f) Let the hydraulic fluid flow until the fuse closes and the flow stops.

(g) Make sure that the quantity collected in the oil resistant container (5 gal)(19 Liter), STD-1055 is 0.26 gal (0.98 l) - 0.41 gal (1.55 l).

(h) Close the bleed valve [1].

(i) Remove the bleeder hose, SPL-15035, from the bleed valve [1].

LOM 404 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

(j) Tighten the bleed valve [1] to 45 in-lb (5.1 N·m).

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

(k) Tighten the bleed valve [1] to 60 ±15 in-lb (6.8 ±1.7 N·m).

LOM 411, 416, 450, 465-999; LOM 402, 404, 406, 407, 420, 422, 425, 433, 434, 437, 438, 440, 442-447, 451-463 POST SB 737-32-1441; LOM 427, 428 POST SB 737-32-1441 AND PRE SB 737-32-1494

(l) Tighten the bleed valve [1] to 34 ±1 in-lb (3.84 ±0.15 N·m).

LOM 422, 425, 426, 429-431, 433, 434, 440, 442-447, 451-457, 461-463; LOM 402, 404, 406, 407, 411, 416, 420, 437, 438, 450, 458-460, 465-999 POST SB 737-32-1429; LOM 427, 428 PRE SB 737-32-1494

(m) Tighten the bleed valve [1] to 60.19 ±6.02 in-lb (6.8 ±0.7 N·m).

LOM ALL

(n) Install the screw [2] in the center of the bleed valve [1].

(o) Install a lockwire, if previously installed, on the bleed valve [1].

(p) On the alternate system fuse for the main landing gear being bled, pull the fuse bypass lever and hold it in this bypass position for 5 seconds minimum.

SUBTASK 32-41-00-870-008

(7) Do these steps that follow when you have checked the fuses for the alternate (System A) hydraulic system:

(a) Make sure that the two alternate (System A) hydraulic fuses are not set.

1) Operate the brake pedals several times.

2) Look for movement of the brake wear indicator pins to make sure all of the brakes operate.

(b) Remove the external hydraulic pressure for the alternate (System A) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(c) Make sure that the fluid in the alternate (System A) hydraulic reservoir is at the correct level, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

(d) If the alternate (System A) hydraulic reservoir needs to be filled, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

HYDRAULIC BRAKE SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) An adjustment of the hydraulic brake system

NOTE: After repair or replacement of the linkage or cables, the mechanical portion of the brake control system must be adjusted (rigged).

(2) An functional test of the normal and alternate brake application

(3) An operational test of the landing gear retract braking

(4) An operational test of the hydraulic brake accumulator

(5) An operational test of the alternate brake system.

B. To do a functional test of the hydraulic brake system, do all of the tasks in this procedure.

TASK 32-41-00-820-801

2. Hydraulic Brake System - Adjustment

(Figure 501)

A. General

(1) The landing gear brake system can be adjusted with the airplane on or off jacks.

(2) The hydraulic pressure can be 'On' or 'Off' during adjustment.

(3) The landing gear brake system must be adjusted with the brakes off.

(4) If rig pin tools are not available, use pins that are 0.309 in. (7.85 mm) - 0.311 in. (7.90 mm) in diameter.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
20-10-10-000-801	Turnbuckle Locking Clips Removal (P/B 401)
20-10-10-400-801	Turnbuckle Lock Installation (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1553	Tensiometer - Cable, Low Tension (200 lbs and below) Part #: 102-03108 Supplier: 21844 Part #: 102-03120 Supplier: 21844 Part #: ACM-200 Supplier: 13331 Part #: ACX-250-1 Supplier: 13331 Part #: T60-1001-C8-1A Supplier: 0N8U4

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(Continued)

Reference	Description
COM-1554	Tensiometer - Cable, High Tension (200 lbs and above) Part #: 102-03120 Supplier: 21844 Part #: ACM-300 Supplier: 13331 Part #: ACM-600 Supplier: 13331 Part #: ACX-500-1 Supplier: 13331 Part #: T5-8008-106-00 Supplier: 0N8U4 Part #: T60-1001-C9-1A Supplier: 0N8U4
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-9118	Kit - Rigging Pin Part #: F70207-128 Supplier: 81205

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Adjustment

SUBTASK 32-41-00-480-014

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-480-015

(2) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-860-012

(3) Release the parking brake.

SUBTASK 32-41-00-860-025

(4) Make sure that the cable system is rigged so that the rig pin LGB1 and rig pin LGB2 can be inserted and removed without binding in the rig pin holes.

(a) If the rig pin LGB1 and rig pin LGB2 move freely through the rig pin holes, no further adjustment of the forward pushrod [2] and aft pushrod [2] is necessary.

(b) If the rig pin LGB1 and rig pin LGB2 do not move freely through the rig pin holes, do the adjustment of the forward pushrod [2] and aft pushrod [2].

SUBTASK 32-41-00-860-026

(5) One system cycle is defined as alternately depressing the toe pad portion of the pedals to their stop (full on) and fully releasing (full off).

F. Brake Control System Adjustment

SUBTASK 32-41-00-820-004

(1) Adjust the brake pedal bus [1], do these steps:

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(a) Reduce the cable tension in all four cables to zero:

1) Remove the turnbuckle locking clips [5] from the turnbuckles [6].

2) Turn the turnbuckles [6] to reduce the tension.

3) Alternate the adjustment between the cables to make sure that the tension in each cable does not differ by more than 50 lbf (222 N) at any time.

(b) Adjust the aft pushrod [2] on the brake pedal bus [1].

1) Loosen the jam nut [7] on the right end of the pushrod [2].

2) Remove the nut [13], washer [12], bolt [8], and bushing [9] to disconnect the aft pushrod [2] from the crank arm clevis [11].

(c) Adjust the forward pushrod [2] on the brake pedal bus [1].

1) Create a cross hair, consisting of two lines, with a fine tip felt pen at the junction of the two rods:

NOTE: This will be a reference point for future adjustments.

a) Make the cross-hair before the screws [28] are removed.

b) Put one line horizontally across both tubes, halfway between the screw head and nut.

c) Put the other line around the tube where the smaller tube meets the larger tube to complete the cross hair.

d) Make sure that the pushrod end inspection hole is not open.

2) Loosen the jam nut [7] on the right end of the forward pushrod [2].

3) Remove the screws [28], washers [29], and nuts [30] in the center of the pushrod [2].

a) Keep the screws [28], washers [29], and nuts [30] for the reassembly after the pushrod [2] adjustment.

(d) Install rig pin LGB1, F70207-14, from rigging pin kit, SPL-1585, through the left beam structure and brake control bellcrank [4].

NOTE: It is necessary for the rig pin to remain installed for the cable adjustment.

(e) Install rig pin LGB2, F70207-14, from rigging pin kit, SPL-1585, through the right beam structure and brake control bellcrank [4].

NOTE: It is necessary for the rig pin to remain installed for the cable adjustment.

(f) Push the aft pushrod [2] to the left to take up the tolerance.

(g) Push the right side crank arm clevis [11] to the left to take up the tolerance.

(h) Align the right rod end [10] fastener with the right side crank arm clevis [11]:

1) Turn the rod end [10].

2) Install the fastener.

a) Do not install the washer or nut at this time.

(i) Turn the pushrod [2] to lengthen or shorten the forward pushrod [2] to get the original cross hair position.

1) Install only one screw [28], washer [29], and nut [30] at this time.

(j) With the left rig pin installed, slowly remove the right rig pin and observe the forward and aft pushrods [2] for movement.

1) If the pushrods [2] move, do these steps:

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a) Lengthen the aft pushrod [2] one turn.

b) Install the right rig pin again.

c) Repeat the right rig pin removal.

<1> If the pushrod [2] movement is more than before, do these steps:

<a> Shorten the aft pushrod [2] to the previous length, then one turn shorter.

<b> Repeat the rig pin installation and removal.

<2> Select the position that has the least pushrods [2] movement.

(k) Do a check of the rig pin fit.

NOTE: The rig pins will be biased in the hole. This means the rig pins will support the weight of the pedals and bus structure and not be entirely free.

1) Make sure that the rig pin does not bind or needs excessive force to install or remove it.

(l) Install the remaining fasteners to complete the installation of the forward pushrod [2] and aft pushrods [2].

1) For the aft pushrod [2], install the bolt [8], bushing [9], washer [12], and nut [13] to the crank arm clevis [11].

2) Tighten the both jam nuts [7] for the aft pushrod [2].

3) For the forward pushrod [2], install the remaining screw [28], washer [29], and nut [30].

a) Tighten the nuts [30] to snug plus 1/4 turn.

4) For the forward pushrod [2], tighten the jam nuts [7].

5) Make sure that the threads of the rod ends [10] can be seen for at least half of the inspection holes, or there are no more than 15 exposed threads between the jam nut [7] and bearing.

NOTE: This will make sure that the threads of the rod ends correctly engage the pushrods.

6) If no further adjustments are necessary, increase the tension in the cables per the tension value in Table 501.

a) When the tension with the rig pins in position is increased, alternate the adjustment between the cables to make sure that the tension in each cable does not differ by more than 50 lbf (222 N) at any time.

NOTE: This will keep the rig pins from bending.

(m) If the brake cables will not be adjusted, remove rig pins LGB1 and LGB2 from the brake control bellcrank [4].

SUBTASK 32-41-00-820-005

(2) Adjust the left brake metering valve [21] and right brake metering valve [27], do these steps:

(a) Disconnect the control rod [20] from the crank [25] for the applicable brake metering valve.

NOTE: The brake metering valve is spring loaded to the brakes off position. This will position the brake metering valve.

1) Remove the nut [18], washer [26], and bolt [22] to disconnect the control rod [20] from the crank [25].

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2) Remove the retainer [23].

3) Remove the bushing [24] from the crank [25].

4) Loosen the jam nuts [19] on the two ends of the control rod [20].

(b) With the brake pedals in the off position, install the rigging pin kit, SPL-1585, with the rigging pin kit, SPL-9118, between the crank [25] and rig pin structure hole.

1) Use the rigging pin kit, SPL-9118, to install the rig pin LGB3, rigging pin kit, SPL-1585, through the rig pin hole for the left brake metering valve [21].

2) Use the rigging pin kit, SPL-9118, to install the rig pin LGB4, rigging pin kit, SPL-1585, through the rig pin hole for the right brake metering valve [27].

3) Adjust the control rod [20] to obtain a rig pin slip fit.

4) Install the bushing [24] in the crank [25].

a) Install the retainer [23] to hold the bushing [24].

5) Install the bolt [22], washer [26], and nut [18] to connect the control rod [20] to the crank [25] for the applicable brake metering valve.

6) Make sure that the rig pin LGB3 or rig pin LGB4 moves freely through the rig pin holes.

(c) If the rigging pin kit, SPL-9118, is not available, to install the rig pin, do these steps:

NOTE: The rig pin will move from the neutral position when the crank position changes if the brake cables are adjusted without the rigging pin kit, SPL-9118.

1) Install the bushing [24] in the crank [25].

a) Install the retainer [23] to hold the bushing [24].

2) Install the bolt [22], washer [26], and nut [18] to connect the control rod [20] to the crank [25] for the applicable brake metering valve.

3) Insert the rig pin.

4) Adjust the control rod [20] by turning the threaded control rod [20] only, all the way in one direction until the rig pin contacts the crank [25].

5) Reverse the adjustment direction and count the turns until the rig pin contacts the other side of the crank [25].

6) Divide the number of turns by 2 and reverse the rod adjustment direction again.

NOTE: This will position the rig pin in the neutral position in the crank.

(d) Tighten the jam nut [19] on the two ends of the control rod [20].

(e) If the brake cables will not be adjusted, remove rig pin LGB3 or LGB4 from the rig pin holes for the left brake metering valve [21] and right brake metering valve [27].

SUBTASK 32-41-00-820-003

(3) Adjust the brake cables for the left side and the right side, do these steps:

NOTE: It is recommended that airplanes supplied with the cables that contain higher zinc coating (Grade D or Grade K) be re-tensioned 3 to 4 months into service. This will bring the tension of the control cables within the desired range. After the cables are re-tensioned, the high zinc cables will continue to relax at a rate that is equivalent to other conformed cables.

(a) Make sure that the rig pins LGB1 and LGB2 are installed in the bellcrank rig pin holes [3] and the rig pins LGB3 and LGB4 are installed in the brake metering valve rig pin holes.

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(b) For the locking clips [5] on the brake cables, do this task: Turnbuckle Locking Clips Removal, TASK 20-10-10-000-801.

(c) Adjust the brake cable tension, by turning the turnbuckles [6] with the low tension cable tensiometer, COM-1553, or high tension cable tensiometer, COM-1554, to the value shown in Table 501.

1) Alternate the adjustment between the LGB1A cable and LGB1B cable for the left side and the LGB2A cable and LGB2B cable for the right side.

2) Make sure that the tension in each cable does not differ by more than 50 lbf (222 N) at any time so the rig pins do not bend.

Table 501/32-41-00-993-804 Brake Cable Rigging Loads

Ambient Temperature	Rigging Load (±10 lbf (44 N))
-20°F (-29°C)	150 lbf (667 N)
-10°F (-23°C)	155 lbf (689 N)
0°F (-18°C)	160 lbf (712 N)
10°F (-12°C)	165 lbf (734 N)
20°F (-7°C)	170 lbf (756 N)
30°F (-1°C)	175 lbf (778 N)
40°F (4°C)	180 lbf (801 N)
50°F (10°C)	185 lbf (823 N)
60°F (16°C)	190 lbf (845 N)
70°F (21°C)	195 lbf (867 N)
80°F (27°C)	200 lbf (890 N)
90°F (32°C)	205 lbf (912 N)
100°F (38°C)	210 lbf (934 N)
110°F (43°C)	215 lbf (956 N)
120°F (49°C)	220 lbf (979 N)

(d) Make sure that the rig pins LGB1 and LGB2 move freely in the rig pin holes for the brake pedal bus [1] and the rig pins LGB3 and LGB4 move freely in the rig pin holes for the brake metering valves.

(e) If new brake cables were installed, do these steps:

1) Increase the tension of the brake cables to 340 lbf (1512 N) - 360 lbf (1601 N) with the high tension cable tensiometer, COM-1554.

a) Alternate the adjustment between the LGB1A cable and LGB1B cable for the left side and the LGB2A cable and LGB2B cable for the right side.

<1> Make sure that the tension in each cable does not differ by more than 50 lbf (222 N) at any time so the rig pins do not bend.

2) Make sure that the rig pins LGB1 and LGB2 move freely in the rig pin holes for the brake pedal bus [1] and the rig pins LGB3 and LGB4 move freely in the rig pin holes for the brake metering valves.

3) Remove the rig pins LGB1 and LGB2 from the brake pedal bus [1] and the rig pins LGB3 and LGB4 from the brake metering valves.

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4) Push the left brake pedals to their stops and then fully release them 25 times.

5) Push the right brake pedals to their stops and then fully release them 25 times.

6) Install the rig pins LGB1 and LGB2 in the rig pin holes for the brake pedal bus [1] and the rig pins LGB3 and LGB4 in the rig pin holes for the brake metering valves.

NOTE: LGB1 is for the captain' brake pedal bus and LGB2 is for the first officer's brake pedal bus.

7) Adjust the brake cable tension with the low tension cable tensiometer, COM-1553, or high tension cable tensiometer, COM-1554, to the value shown in the brake cable tension vs. temperature chart Table 501.

8) Make sure that the rig pins LGB1 and LGB2 move freely in the rig pin holes for the brake pedal bus [1] and the rig pins LGB3 and LGB4 move freely in the rig pin holes for the brake metering valves.

(f) Remove the rig pins LGB1 and LGB2 from the brake pedal bus [1] and the rig pins LGB3 and LGB4 from the brake metering valves.

(g) Push the left brake pedals to their stops and then fully release them 3 times.

(h) Push the right brake pedals to their stops and then fully release them 3 times.

(i) Install the rig pins LGB1 and LGB2 in the rig pin holes for the brake pedal bus [1] and the rig pins LGB3 and LGB4 in the rig pin holes for the brake metering valves.

NOTE: LGB1 is for the captain' brake pedal bus and LGB2 is for the first officer's brake pedal bus.

(j) Make sure that the rig pins LGB1 and LGB2 move freely in the rig pin holes for the brake pedal bus [1] and the rig pins LGB3 and LGB4 move freely in the rig pin holes for the brake metering valves.

(k) Remove the rig pins LGB1 and LGB2 from the brake pedal bus [1] and the rig pins LGB3 and LGB4 from the brake metering valves.

(l) For the locking clip [5] on the brake cables, do this task: Turnbuckle Lock Installation, TASK 20-10-10-400-801.

END OF TASK

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G14764 S0006575431_V2

Hydraulic Brake System Adjustment
Figure 501/32-41-00-990-803 (Sheet 1 of 6)

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RIGHT CABLE INSTALLATION
(LEFT CABLE INSTALLATION IS EQUIVALENT)

B

G14766 S0006575432_V2

Hydraulic Brake System Adjustment
Figure 501/32-41-00-990-803 (Sheet 2 of 6)

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RIGHT BRAKE PEDAL BUS
(LEFT BRAKE PEDAL BUS IS EQUIVALENT)

C

G19936 S0006575433_V3

Hydraulic Brake System Adjustment
Figure 501/32-41-00-990-803 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE PEDAL BUS PUSHRODS
(VIEW IN THE UP DIRECTION)

G

NOTE:

SURROUNDING STRUCTURE AND COMPONENTS REMOVED FOR CLARITY.

3004029 S0000779397_V1

Hydraulic Brake System Adjustment
Figure 501/32-41-00-990-803 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G14769 S0006575434_V3

Hydraulic Brake System Adjustment
Figure 501/32-41-00-990-803 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT BRAKE METERING VALVE

E

RIGHT BRAKE METERING VALVE

F

2303877 S0000522373_V3

Hydraulic Brake System Adjustment
Figure 501/32-41-00-990-803 (Sheet 6 of 6)

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TASK 32-41-00-710-801

3. Normal and Alternate Brake Application - Functional Test

A. General

(1) This procedure does an operation test of these systems:

(a) The operation of the brakes with hydraulic power supplied by the NORMAL (System B) brake hydraulic system.

(b) The operation of the brakes with hydraulic power supplied by the ALTERNATE (System A) brake hydraulic system.

(2) The brake pedal force and angle will also be checked in this task.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1822	Gauge - Digital Force, Push-Pull (100 Lb Capacity, 0.125 Lb Resolution or better) Part #: DFS3-100 Supplier: 11710 Part #: FDIX 100 Supplier: 0BFD9 Opt Part #: DFGS100 Supplier: 11710 Opt Part #: FDI 100 Supplier: 0BFD9 Opt Part #: FDV 100 Supplier: 0BFD9
SPL-2555	Measuring Equipment - , Brake Pedal (Single Pedal) Part #: J32001-67 Supplier: 81205 Opt Part #: J32001-63 Supplier: 81205 Opt Part #: J32001-64 Supplier: 81205
SPL-10813	Gauge Set, Pressure Check - Hydraulic Brake System Part #: C32051-1 Supplier: 81205 Opt Part #: F72977-45 Supplier: 81205 Opt Part #: F72977-46 Supplier: 81205 Opt Part #: F72977-47 Supplier: 81205 Opt Part #: F72977-62 Supplier: 81205
SPL-11464	Measuring Equipment - Brake Pedal (Dual Pedal) Part #: J32001-68 Supplier: 81205
SPL-15031	Test Equipment - Brake Bleed Part #: G32075-16 Supplier: 81205
STD-1232	Protractor - Digital

D. Location Zones

Zone	Area
211	Flight Compartment - Left

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(Continued)

Zone	Area
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Procedure

SUBTASK 32-41-00-480-016

(1) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-860-013

(2) Release the parking brake.

SUBTASK 32-41-00-480-017

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(3) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-480-019

(4) Install one of the tools or equivalent on the captain's and the first officer's brake pedals:

(a) push-pull digital force gauge, COM-1822, or

(b) brake pedal measuring equipment, SPL-2555, or

(c) brake pedal measuring equipment, SPL-11464.

SUBTASK 32-41-00-480-020

(5) Install the pressure gauge, SPL-15031, or the optional gauge set, SPL-10813, on each brake.

SUBTASK 32-41-00-710-007

(6) Use a digital protractor, STD-1232, to measure the angle of the brake pedals.

SUBTASK 32-41-00-790-003

> **WARNING** KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(7) For the A or the B hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(a) To test the normal (System B) brake system, only pressurize the system B hydraulic system.

(b) To test the alternate (System A) brake system, only pressurize the system A hydraulic system.

NOTE: The normal hydraulic system (System B) must not be pressurized for this test.

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F. Procedure

NOTE: The steps that follow are applicable for the normal and alternate brake systems. The system that is tested depends on which hydraulic system is pressurized.

SUBTASK 32-41-00-710-008

(1) Measure the brake pedal force and travel for each brake pedal.

(a) Make sure that each pedal meets the requirements in Table 1.

(b) Attach a digital protractor, STD-1232, to the brake pedal to measure the travel (position).

1) Make sure that the digital protractor, STD-1232, is set to zero.

(c) Attach a spring scale or brake pedal measuring equipment, SPL-2555, to measure pedal forces.

1) Make sure that the force gage is set to zero.

Table 1

	*[1]	*[2]	
Brake Pedal Travel (Deg)	Brake Pedal Force	Brake Pedal Force	Brake Pressure
4.5 ± 1.5	28 ±3 lbf (125 ±14 N)	42 ±3 lbf (187 ±14 N)	400 ±50 psig (2758 ±345 kPa)

*[1] The pedal force must be measured by the load that you apply perpendicular to the tip of the pedal, 8.25 in. (209.55 mm) from the brake pedal pivot. The brake pressure is the value shown at each brake gage.

*[2] The pedal force must be measured with the J32001-64 equipment. The load on the J32001 is located 5.48 in. (139.19 mm) from the brake pedal pivot. The brake pressure is the value shown at each brake gage.

(d) Push the captain's left and right brake pedals until the brake force gage at each pedal shows the value in Table 1.

(e) Hold the brake pedals in this position.

(f) Make sure that the hydraulic pressure at each brake is within the specified pressure.

(g) Make sure that the angle of the captain's left and right brake pedals are 4.5 ± 1.5 degrees.

(h) Release the captain's brake pedals.

(i) Make sure that the brakes fully release by observing that the brake pistons retract away from the heat sink.

(j) Make sure that the angle of the captain's left and right brake pedals are 0.0 ± 0.50 degrees.

(k) Push the captain's brake pedals fully down. Make sure that the hydraulic pressure at each brake is 3000 ±150 psi (20,684 ±1034 kPa).

(l) Release the captain's brake pedals.

(m) Make sure that the brakes fully release by observing that the brake pistons retract away from the brake heat sink.

(n) Repeat the steps (1)(a) through (1)(l) using the first officer's brake pedals.

(o) For the A or the B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-00-080-001

(2) Remove the pressure gauge, SPL-15031, or the optional gauge set, SPL-10813, from each brake.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-00-710-802

4. Gear Retract Braking - Operational Test

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Procedure

SUBTASK 32-41-00-480-021

(1) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-860-015

(2) Release the parking brake.

SUBTASK 32-41-00-480-022

(3) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-41-00-480-023

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-790-004

WARNING KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) For the A and the B hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

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SUBTASK 32-41-00-860-016

WARNING MAKE SURE THE LANDING GEAR ARE DOWN AND LOCKED. INSTALL GROUND LOCK PINS IN ALL LANDING GEAR TO PREVENT LANDING GEAR OPERATION. IF YOU DO NOT INSTALL GROUND LOCK PINS, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(6) Put the landing gear control lever in the UP position.

SUBTASK 32-41-00-710-023

(7) Look at the wear pin indictor on each brake to make sure that the hydraulic pressure has been applied (brake has set).

SUBTASK 32-41-00-710-024

(8) Put the landing gear control lever in the DOWN position.

SUBTASK 32-41-00-710-025

(9) Look at the wear pin indicators on each brake to make sure that the brakes have released (brakes not set).

SUBTASK 32-41-00-860-017

(10) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-00-480-026

(11) If you are done with the maintenance, then remove the chocks from around the tires.

END OF TASK

TASK 32-41-00-720-801

5. Accumulator - Operational Test

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task has instructions to test the operation of the brake accumulator system. This will test the operation of the accumulator charging valve, the pressure transmitter, the accumulator isolation valve, and the accumulator pressure gauge.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
12-15-11-610-801	Check of the Brake Accumulator Pre-charge Pressure (P/B 301)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Procedure

SUBTASK 32-41-00-480-027

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-00-480-030

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-41-00-480-029

(3) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-00-860-018

(4) Release the parking brake.

SUBTASK 32-41-00-860-019

(5) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-00-840-003

(6) Fully push the brake pedals 12 times to remove hydraulic pressure from the brake accumulator.

NOTE: You can look at the wear pin indicators on each brake to see that the brakes no longer actuate when the brake pedals are pushed.

SUBTASK 32-41-00-710-026

(7) Permit approximately 5 minutes for the accumulator hydraulic pressure to become stabilized.

SUBTASK 32-41-00-700-001

(8) To make sure that the brake accumulator has the correct pressure precharge, do this task: Check of the Brake Accumulator Pre-charge Pressure, TASK 12-15-11-610-801.

SUBTASK 32-41-00-790-005

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(9) For the A and the B hydraulic systems, for at least 2 minutes, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-00-710-027

(10) Make sure that the pressure shown by the HYD BRAKE PRESS gauge on the First Officer's panel reads within 100 psig (689 kPa) of the hydraulic system 'B' pressure.

(a) Write down the hydraulic system 'B' steady state pressure value.

SUBTASK 32-41-00-710-028

(11) Make sure that the HYD BRAKE PRESS gauge on the First Officer's panel reads within 100 psig (689 kPa) of the brake accumulator pressure gauge on the rear bulkhead in the right main gear wheel well.

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SUBTASK 32-41-00-860-020

(12) For the B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-00-710-033

(13) Wait approximately one minute until the B hydraulic system pressure drops to less than 1000 psi (6895 kPa).

SUBTASK 32-41-00-710-029

(14) Push the brake pedals to the stops 7 times while you observe the brake accumulator pressure.

NOTE: Wait approximately 3 seconds after each time you apply the brakes.

(a) Make sure that the brake accumulator pressure does not decrease with each brake application.

SUBTASK 32-41-00-860-021

(15) For the A hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-00-710-031

(16) Make sure that the HYD BRAKE PRESS gauge on the First Officer's panel reads within 150 psig (1034 kPa) of hydraulic system 'B' steady state pressure previously written down.

SUBTASK 32-41-00-710-032

(17) Push the brake pedals to the stops 7 times while you observe the brake accumulator pressure.

NOTE: Wait approximately 3 seconds after each time you apply the brakes.

(a) Make sure that the brake accumulator pressure decreases with each brake application.

SUBTASK 32-41-00-700-002

(18) To make sure that the brake accumulator has the correct pressure precharge, do this task: Check of the Brake Accumulator Pre-charge Pressure, TASK 12-15-11-610-801.

SUBTASK 32-41-00-860-022

(19) Set the parking brake.

SUBTASK 32-41-00-860-027

(20) If it is not necessary, remove electrical power. To do this, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

TASK 32-41-00-710-803

6. Alternate Brake System - Operational Test

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left

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(Continued)

Zone	Area
212	Flight Compartment - Right

C. Procedure

SUBTASK 32-41-00-790-006

(1) Do these steps that follow to do an operational test of the alternate (System A) brake system:

> **WARNING**
> KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) For the system A (alternate), do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Fully push the captain's brake pedals.

(c) Examine the brake wear indicators on the brakes to make sure that the brakes engaged.

(d) Release the brake pedals.

(e) Examine the brake wear indicators on the brakes to make sure that the brakes released.

(f) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE DISCONNECT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the brake disconnect

(2) An installation of the brake disconnect.

B. The brake disconnects are installed on each main landing gear brake.

TASK 32-41-11-000-801

2. Brake Disconnect Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

Reference	Description
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-41-11-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-11-860-001

(2) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-11-480-002

(3) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-11-860-002

(4) Release the parking brake.

SUBTASK 32-41-11-860-003

(5) Fully push the captain's brake pedals twelve times to remove the pressure from the brake accumulator.

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SUBTASK 32-41-11-020-001

(6) Disconnect the hose half [1] of the quick disconnect from the brake half [7] of the quick disconnect.

(a) Push the barrel [2] toward the brake and turn the barrel [2] clockwise to disengage the brake half [7] from the hose half [1].

(b) Pull up on the barrel [2] of the hose half [1] of the quick disconnect until the threads of the two halves are engaged.

(c) Turn the barrel [2] counterclockwise to disconnect the hose half [1] from the brake half [7] of the quick disconnect.

E. Brake Disconnect Removal (Hose Half)

SUBTASK 32-41-11-020-002

(1) Disconnect the hydraulic hose [8] from the hose half [1] of the quick disconnect.

SUBTASK 32-41-11-480-003

(2) Install a cap/plug, STD-14686, on the hydraulic hose [8].

SUBTASK 32-41-11-020-006

(3) If it is necessary, remove the elbow fitting [9] from the hose half [1] of the quick disconnect.

F. Brake Disconnect Removal (Brake Half)

SUBTASK 32-41-11-020-003

(1) Remove the bolt [3] and washer [4] that hold the brake half [7] of the quick disconnect to the brake.

SUBTASK 32-41-11-020-004

(2) Remove the brake half [7] of the quick disconnect from the brake.

SUBTASK 32-41-11-020-005

(3) Remove and discard the packing [6] and the rings [5] from the brake half [7] of the quick disconnect.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G87116 S0006575443_V3

Brake Disconnect Installation
Figure 401/32-41-11-990-801 (Sheet 1 of 3)

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3034131 S0000804201_V2

Brake Disconnect Installation
Figure 401/32-41-11-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE)

B

G87323 S0006575444_V5

Brake Disconnect Installation
Figure 401/32-41-11-990-801 (Sheet 3 of 3)

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TASK 32-41-11-400-801

3. **Brake Disconnect Installation**

(Figure 401)

A. **References**

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. **Tools/Equipment**

Reference	Description
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

C. **Consumable Materials**

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00571	Grease - BATCO X8401-2	
G50411	Torque Stripe - EC-1252 [pink or yellow (as required per BAC5001-10)]	BMS8-45 Type I

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Ring	32-41-41-01-029	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 423, 424, 426, 429-432, 437-439, 441, 450, 458-460, 464-999
		32-41-41-01A-040	LOM 422, 425, 427, 428, 433, 434, 440, 442-447, 451-457, 461-463
6	Packing	32-41-41-01-031	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 423, 424, 426, 429-432, 437-439, 441, 450, 458-460, 464-999
		32-41-41-01A-045	LOM 422, 425, 427, 428, 433, 434, 440, 442-447, 451-457, 461-463

E. **Location Zones**

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

F. **Brake Disconnect Installation**

SUBTASK 32-41-11-420-004

(1) If it is necessary, install the elbow fitting [9] to the hose half [1] of the quick disconnect:

(a) Apply a thin layer of hydraulic fluid, D00153, to the elbow threads of the hose half [1] of the quick disconnect.

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(b) Install the elbow fitting [9] to the hose half [1] of the quick disconnect.

(c) Do not tighten the B-nut on the hose half [1] of the quick disconnect at this time.

SUBTASK 32-41-11-420-001

(2) Brake Disconnect Installation (Hose Half):

(a) Remove the cap/plug, STD-14686, from the hydraulic hose [8].

(b) Apply a thin layer of hydraulic fluid, D00153, to the hydraulic hose [8] threads and elbow fitting [9] threads.

(c) Connect the hydraulic hose [8] to the elbow fitting [9], do not tighten at this time.

(d) If it is necessary, loosen the B-nut of the hose half [1] of the quick disconnect.

(e) Turn the elbow fitting [9] on the hose half [1] of the quick disconnect. Make sure that it is parallel to the oleo centerline or a maximum of ten degrees to the oleo centerline (away from the tire).

CAUTION USE TWO WRENCHES TO TORQUE THE HOSE B-NUT. USE ONE TO HOLD THE ELBOW FITTING, AND THE OTHER TO TORQUE THE HOSE B-NUT. IF YOU DO NOT OBEY, DAMAGE TO THE EQUIPMENT CAN OCCUR.

CAUTION MAKE SURE THAT YOU DO NOT TWIST OR MAKE KINKS IN THE HOSE WHEN YOU TIGHTEN THE NUT. IF YOU DO NOT OBEY, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(f) Tighten the B-nut on the hydraulic hose [8].

1) Apply initial torque to 270 ±14 in-lb (31 ±2 N·m).

2) Loosen the B-nut on the hydraulic hose [8] to decrease the torque to zero.

3) Tighten the B-nut on the hydraulic hose [8] to 400 ±20 in-lb (45 ±2 N·m).

(g) Tighten the B-nut on the elbow fitting [9] connection to hose half [1] quick disconnect.

1) Apply initial torque to 270 ±14 in-lb (31 ±2 N·m).

2) Loosen the B-nut on the hose half [1] of the quick disconnect to decrease the torque to zero.

3) Tighten the B-nut on the hose half [1] of the quick disconnect to 400 ±20 in-lb (45 ±2 N·m).

(h) Apply torque stripes, G50411, or other special identification mark to the B-nuts.

SUBTASK 32-41-11-420-002

(3) Brake Disconnect Installation (Brake Half):

(a) Lubricate the new packing [6] and the two new rings [5] with hydraulic fluid, D00153.

(b) Install the new packing [6] and the two new rings [5] on the brake half [7] of the quick disconnect.

(c) Apply a thin layer of BATCO X8401-2 grease, D00571, to the brake half [7] of the disconnect.

(d) Make sure that the BATCO X8401-2 grease, D00571, is on the diametral surface above the upper retaining ring and the lower surface of the mounting flange.

(e) Install the brake half [7] of the quick disconnect on the brake.

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1) Make sure that the alignment pin on the brake goes into the alignment hole in the brake half [7] of the quick disconnect.

(f) Apply the BATCO X8401-2 grease, D00571, to the bolts [3].

(g) Install the bolts [3] and washers [4] that hold the brake half [7] of the quick disconnect to the brake.

(h) Tighten the bolts [3] to 72 in-lb (8 N·m) - 82 in-lb (9 N·m).

(i) Install lockwire on the bolts [3] in pairs.

(j) Make sure that the lockwire or cable passes through the lug hole to the other bolt head on each side of the disconnect (Figure 401).

SUBTASK 32-41-11-420-003

(4) Install the hose half [1] of the quick disconnect to the brake half [7] of the quick disconnect on the brake.

(a) Install the hose half [1] on the brake half [7].

1) Turn the hose half [1] until the internal tangs align with the slots inside the brake half [7] and you can push the hose half down.

2) Push down on the barrel [2] and turn it clockwise to engage the threads.

3) Turn the barrel [2] clockwise until the lock in the bottom of the barrel [2] snaps onto the external lock on the brake half [7].

4) Make sure that the elbow fitting [9] is ten degrees from parallel to the oleo centerline towards the shock strut.

NOTE: This is to help prevent worn areas on the hoses.

(b) Do a visual check to make sure that the lock on hose half [1] is fully and correctly engaged with the lock on the brake half [7].

G. Brake Disconnect Installation Test

SUBTASK 32-41-11-790-001

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) For the A and the B hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-11-860-004

(2) Fully push and hold the captain's brake pedals.

NOTE: You can set the parking brake to hold the pedals.

SUBTASK 32-41-11-790-002

(3) Do a check of the hose half [1] and brake half [7] for leaks.

SUBTASK 32-41-11-790-003

(4) Release the captain's brake pedals (or parking brake).

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H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-11-860-005

(1) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE METERING VALVE CONTROL QUADRANT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the brake metering valve control quadrant (referred to as quad and shaft assy [22]).

(2) An installation of the brake metering valve control quadrant.

B. There are two brake metering valve control quadrants on the airplane. One control quadrant is for the captain's brake system. The other control quadrant is for the first officer's brake system. This procedure is applicable to the two control quadrants.

TASK 32-41-21-000-801

2. Brake Metering Valve Control Quadrant Removal

(Figure 401)

A. References

Reference	Title
20-10-10-000-801	Turnbuckle Locking Clips Removal (P/B 401)
25-22-00-000-801	Passenger Seat - Removal (P/B 401)
25-27-15-000-801	Carpet Removal (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-21-00-000-801	Passenger Cabin Floor Panel - Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1569	Clamp - Control Cable Part #: A20005-9 Supplier: 81205

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Prepare for the Removal

SUBTASK 32-41-21-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

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SUBTASK 32-41-21-840-001

(2) To get access to the cables and the turnbuckles (forward of the nose wheel well), do this step:

(a) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-41-21-840-002

(3) Remove the passenger seats from station 706 through station 727, do this task: Passenger Seat - Removal, TASK 25-22-00-000-801.

NOTE: Do this step to get access to the control quadrant assemblies of the brake metering valves.

SUBTASK 32-41-21-840-003

(4) For the area that is below the seats you removed, do this task: Carpet Removal, TASK 25-27-15-000-801.

SUBTASK 32-41-21-840-004

(5) Remove the center floor panels to get access to the control quadrant assemblies for the brake metering valve, do this task: Passenger Cabin Floor Panel - Removal, TASK 53-21-00-000-801.

F. Brake Metering Valve Control Quadrant Removal

SUBTASK 32-41-21-020-001

(1) Install a control cable clamp, SPL-1569, on the two cables that are connected to the control quad and shaft assy [22] that you will remove, this will keep light tension on the cables.

NOTE: Light tension on the cables will prevent wind off on the cable drums and also make sure they do not move out from the pulley guides.

SUBTASK 32-41-21-020-002

(2) Go to the access opening that is forward of the nose wheel well and do the following:

(a) To remove the locking clip [1] from the turnbuckle [2] on the brake forward control cables [3] for the brake metering control quad and shaft assy [22] you will remove, do this task: Turnbuckle Locking Clips Removal, TASK 20-10-10-000-801.

(b) Loosen the turnbuckle [2] for the forward control cable [3] to release the tension in the cable.

SUBTASK 32-41-21-020-003

(3) Go to the access opening in the passenger floor and do the steps that follow:

(a) Disconnect the forward control cable [3] from the control quad and shaft assy [22]:

1) Remove the pins [38], that holds the ends of the forward control cables [3], from the quad and shaft assy [22].

2) Pull the fittings on the end of the forward control cables [3] from the control quad and shaft assy [22].

SUBTASK 32-41-21-020-004

(4) Go to the wheel well and remove components from the quadrant shaft as follows:

(a) Do the steps that follow to disconnect the rod [6] from the crank [5].

1) Remove the nut [4], the bolt [9], the washer [12], retainer [10], and the bushing [11].

2) Remove the rod [6] end from its position in the crank [5].

(b) Do the steps that follow to remove the crank [5] from the quadrant shaft:

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1) Remove the cotter pin [30], the nut [29], the washers [27], [28], and the spacer [26] from the quadrant shaft.

2) Remove the bolt [20], the washer [21], and the nut [23] from the crank [5] on the quadrant shaft.

3) Remove the crank [5] and the spacer [25] from the quadrant shaft.

4) Install the spacer [25], the spacer [26], the washers [27], [28], and the nut [29] back on to the quadrant shaft.

NOTE: These parts are reinstalled to help keep the quadrant assembly in the support when you remove it.

(c) Remove the four bolts [14], [17], and their washers [18], [15] that hold the control quad and shaft assy [22] to the pressure deck.

SUBTASK 32-41-21-020-005

(5) Go to the access opening in the passenger floor and do the steps that follow:

NOTE: It is necessary to have a person in the wheel well to turn the nuts [31], [33] while you hold the bolts [36], [37].

(a) Remove the four bolts [36], [37], their washers [32], [34], and their nuts [31], [33] that hold the control quad and shaft assy [22] to the pressure deck.

1) Make sure the person in the wheel well holds the rig pin bracket [13] and removes it when the bolts [36], [37] are removed.

(b) Remove the control quad and shaft assembly [22] from the pressure deck.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G26883 S0006575449_V2

Brake Metering Valve Control Quadrant Installation
Figure 401/32-41-21-990-801 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RIGHT BRAKE CABLES
(LEFT BRAKE CABLES ARE EQUIVALENT)

B

G26886 S0006575450_V2

Brake Metering Valve Control Quadrant Installation
Figure 401/32-41-21-990-801 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Metering Valve Control Quadrant Installation
Figure 401/32-41-21-990-801 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FWD

RIGHT BRAKE METERING VALVE
(LEFT BRAKE METERING VALVE IS EQUIVALENT)

D

(VIEW IN AFT DIRECTION)

E

G26892 S0006575452_V3

Brake Metering Valve Control Quadrant Installation
Figure 401/32-41-21-990-801 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Metering Valve Control Quadrant Installation
Figure 401/32-41-21-990-801 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RIGHT BRAKE METERING VALVE CONTROL QUADRANT

H

G26915 S0006575454_V2

Brake Metering Valve Control Quadrant Installation
Figure 401/32-41-21-990-801 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-21-400-801

3. **Brake Metering Valve Control Quadrant Installation**

(Figure 401)

A. **References**

Reference	Title
20-10-10-400-801	Turnbuckle Lock Installation (P/B 401)
25-22-00-400-802	Passenger Seat - Installation (P/B 401)
25-27-15-400-801	Carpet - Installation (P/B 401)
32-41-00-820-801	Hydraulic Brake System - Adjustment (P/B 501)
53-21-00-400-801	Passenger Cabin Floor Panel - Installation (P/B 401)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1569	Clamp - Control Cable Part #: A20005-9 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
22	Quad and shaft assembly	32-41-21-03-090	LOM ALL
		32-41-21-03-095	LOM ALL
30	Pin	32-41-21-03-070	LOM ALL
38	Pin	32-41-81-01-005	LOM ALL

E. **Location Zones**

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

F. **Access Panels**

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Brake Metering Valve Control Quadrant Installation

SUBTASK 32-41-21-160-001

(1) Make sure that the pressure deck is clean in the area where the control quad and shaft assembly [22] is installed.

SUBTASK 32-41-21-020-006

(2) Install shims [35] at the four outer bolt locations for the control quad and shaft assembly [22], do these steps:

(a) Put shims [35] on the pressure deck at the four outer bolt locations for the control quad and shaft assembly [22].

(b) Put the control quad and shaft assembly [22] in its location on the shims [35] and pressure deck.

(c) Make sure that there is no clearance greater than 0.005 in. (0.127 mm) between any shim [35] and the control quad and shaft assembly [22].

(d) If the clearance at a shim [35] is too large, remove laminations from the other shims to get the tolerance at that shim.

(e) Remove the control quad and shaft assembly [22] from its position.

(f) Re-install the shims [35] with wet primer, C00259.

SUBTASK 32-41-21-390-001

(3) Use sealant, A00247, to apply a fay surface seal to the surface between the control quad and shaft assembly [22], the pressure deck and around the shims [35].

(a) Make sure that there is no obstructions that cover the drain hole for the control quadrant assembly.

SUBTASK 32-41-21-420-001

(4) Put the quad and shaft assembly [22] in its location on the shims [35] and pressure deck.

SUBTASK 32-41-21-390-002

(5) In the wheel well, use sealant, A00247, to apply a fay surface seal to the surface between the rig pin bracket [13] and the ceiling of the wheel well.

SUBTASK 32-41-21-420-002

(6) Put the rig pin bracket [13] in its location on the wheel well ceiling when you install the bolts in the next step.

SUBTASK 32-41-21-020-007

(7) Install the bolts [36] and bolts [37] in the passenger compartment for the control quad and shaft assembly [22], do these steps:

NOTE: It is necessary to have a person in the wheel well to turn the nuts while you hold the bolts.

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the bolts [36], bolts [37], washers [32], washers [34], nuts [31], and nuts [33].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Install the bolts [36], bolts [37], washers [32], washers [34], nuts [31], and nuts [33], that hold the control quad and shaft assembly [22] to the pressure deck.

1) Make sure that the person in the wheel well holds the rig pin bracket [13] to the wheel well ceiling when you install the bolts.

SUBTASK 32-41-21-420-003

(8) Install the components for the control quad and shaft assembly [22] (in the wheel well) as follows:

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the two bolts [14], two bolts [17], two washers [15], and two washers [18].

(b) Install the two bolts [14], two bolts [17], two washers [15], and two washers [18] that hold the control quad and shaft assembly [22] to the pressure deck.

(c) Remove the cotter pin [30], nut [29], washer [27], washer [28], spacer [25], and spacer [26] if they are installed on the quadrant shaft.

(d) Install the spacer [25] on the quadrant shaft.

(e) Install the crank [5] on the shaft with the chamfer side of the spline toward the spacer [25].

(f) Install the spacer [26], washer [27], washer [28], and nut [29] on the control quadrant shaft.

(g) Tighten the nut [29] to 10 in-lb (1.1 N·m) - 35 in-lb (4.0 N·m).

(h) Install the new cotter pin [30] in the nut [29] and the shaft.

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(i) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the bolt [20] for the crank [5].

(j) Install the bolt [20], washer [21], and nut [23] on the crank [5] to hold it to the control quadrant shaft.

SUBTASK 32-41-21-420-004

(9) Connect the control rod [6] to the crank [5], do these steps:

(a) Put the control rod [6] in its position in the crank [5].

(b) Install the bushing [11] and then the retainer [10] on the crank [5].

(c) Install the bolt [9], washer [12], and nut [4] to connect the control rod [6] to the crank [5].

(d) Lubricate the two control rod end bearings [40] with grease, D00633.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-21-420-005

(10) Go to the access opening in the passenger floor and do the steps that follow:

(a) Connect the forward cable [3] to the control quad and shaft assembly [22].

1) Put the fittings on the end of the forward cables [3] in their position in the control quad and shaft assembly [22].

2) Install the new pins [38] that hold the ends of the control cables in the quad and shaft assembly [22].

SUBTASK 32-41-21-020-008

(11) Go to the access opening that is forward of the nose wheel well and do the following:

(a) Tighten the turnbuckle [2] for the forward cable [3] to put the cables in light tension.

SUBTASK 32-41-21-020-009

(12) Do this task: Hydraulic Brake System - Adjustment, TASK 32-41-00-820-801.

(a) Make sure that you remove the control cable clamp, SPL-1569, from the two cables that are connected to the control quad and shaft assembly [22] before you adjust the control cables.

(b) Make sure that a locking clips [1] are installed on the turnbuckles [2] when you have adjusted the forward cables [3], do this task: Turnbuckle Lock Installation, TASK 20-10-10-400-801.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-21-840-005

(1) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-41-21-840-006

(2) Install the floor panels, do this task: Passenger Cabin Floor Panel - Installation, TASK 53-21-00-400-801.

SUBTASK 32-41-21-840-007

(3) Do this task: Carpet - Installation, TASK 25-27-15-400-801.

SUBTASK 32-41-21-840-008

(4) Do this task: Passenger Seat - Installation, TASK 25-22-00-400-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE PEDAL BUS CRANK ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the brake pedal bus crank assembly

(2) Installation of the brake pedal bus crank assembly.

B. There are two brake pedal bus crank assemblies on the airplane. One brake pedal bus crank assembly is for the captain's brake system. The other brake pedal bus crank assembly is for the first officer's brake system. This procedure is applicable to the two brake pedal bus crank assemblies.

TASK 32-41-22-000-801

2. Brake Pedal Bus Crank Assembly Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
27-21-31-000-801	Rudder Pedals Removal (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-81-000-801	Hydraulic Brake Control Cable Removal (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Removal

SUBTASK 32-41-22-480-001

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

SUBTASK 32-41-22-480-002

(2) Make sure that the tires for the nose landing gear and for the main landing gear have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-22-860-001

(3) Release the parking brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-22-010-001

(4) Open this access panel:

Number	Name/Location
112A	Forward Access Door

E. Brake Pedal Bus Crank Assembly Removal

SUBTASK 32-41-22-020-001

(1) Remove the brake control cables [21] from the brake pedal bus crank assembly [1] (TASK 32-41-81-000-801).

SUBTASK 32-41-22-020-002

(2) Disconnect the aft ends of the rod assemblies [7] from the bellcrank assemblies [6] (TASK 27-21-31-000-801).

SUBTASK 32-41-22-020-003

(3) Remove the bolts [2], bushings [3], washers [4], and nuts [5] to disconnect the rod assemblies [8] from the crank assembly [9] and crank assembly [11].

SUBTASK 32-41-22-000-001

(4) On the right side only, remove the screws [12] and washers [13] to disconnect the bracket assembly [36] from the brake pedal bus crank assembly [1].

SUBTASK 32-41-22-020-004

(5) Remove the bolts [14], washers [15], washers [16], and nuts [17] to remove the brake pedal bus crank assembly [1] from the structure.

SUBTASK 32-41-22-020-005

(6) Remove the bolts [2], bushings [3], washers [4], and nuts [5] to remove the brake control rod assemblies [7] from the crank assembly [9] and crank [10].

SUBTASK 32-41-22-020-006

(7) Disassemble the brake pedal bus crank assembly [1].

(a) Remove the bolt [18], washer [19], and nut [20] from the crank [10].

(b) Remove the pin [22], nut [23], if installed washer [24], and spacer [25] from the shaft [31].

1) Discard the pin [22].

(c) Remove the pin [22], nut [35], if installed washer [34], and washer [33] from the shaft [31].

1) Discard the pin [22].

(d) Remove the shaft [31], bearing [26], crank assembly [11], bearing [27], spacer [28], crank assembly [9], crank [10], and spacer [30] from the bus support assembly [37].

1) If necessary for the replacement, remove the bearing [32] from the bus support assembly [37].

2) If necessary for the replacement, remove the bearing [29] from the crank assembly [9].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(RIGHT SIDE IS SHOWN, LEFT SIDE IS EQUIVALENT)

A

COOLING EXHAUST DUCT ATTACHMENT
(RIGHT SIDE ONLY)

B

3065902 S0000827827_V2

Brake Pedal Bus Crank Assembly Installation
Figure 401/32-41-22-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(RIGHT SIDE IS SHOWN, LEFT SIDE IS EQUIVALENT)

C

A-A

3065885 S0000827828_V2

Brake Pedal Bus Crank Assembly Installation
Figure 401/32-41-22-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Pedal Bus Crank Assembly Installation
Figure 401/32-41-22-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-22-400-801

3. **Brake Pedal Bus Crank Assembly Installation**

(Figure 401)

A. **References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-02-900-801	Bearings and Bushings - Removal/Installation (P/B 401)
27-21-31-400-801	Rudder Pedals Installation (P/B 401)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-41-00-710-801	Normal and Alternate Brake Application - Functional Test (P/B 501)
32-41-00-820-801	Hydraulic Brake System - Adjustment (P/B 501)
32-41-81-400-801	Hydraulic Brake Control Cable Installation (P/B 401)

B. **Consumable Materials**

Reference	Description	Specification
D50180	Grease - Aircraft General Purpose (AeroShell Grease 33)	BMS3-33, MIL-PRF-23827
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38
G50961	Coating - Corrosion Inhibiting Epoxy Primer - (BAC 377 Yellow Color)	BMS10-11 Type I

C. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
22	Pin	32-41-21-01-055	LOM ALL
		32-41-21-02-055	LOM ALL
29	Bearing	32-41-21-01-122	LOM ALL
		32-41-21-02-122	LOM ALL
32	Bearing	32-41-21-01-135	LOM ALL
		32-41-21-02-145	LOM ALL

D. **Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right

E. **Access Panels**

Number	Name/Location
112A	Forward Access Door

F. **Brake Pedal Bus Crank Assembly Installation**

SUBTASK 32-41-22-420-001

(1) If removed for the replacement, install new bearing [32] and new bearing [29] as follows:

(a) Apply coating, G50961 to the bearing [32]. Roller swage to the bus support assembly [37] (Bearings and Bushings - Removal/Installation, TASK 20-10-02-900-801).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Apply coating, G50961 to the bearing [29]. Roller swage to the crank assembly [9] (Bearings and Bushings - Removal/Installation, TASK 20-10-02-900-801).

SUBTASK 32-41-22-420-010

(2) Install the shaft [31] to the bus support assembly [37] as follows:

(a) Install the spacer [30] onto the shaft [31]. Install shaft [31] into the crank [10] and the bus support assembly [37] with the washer [33] and, if removed, washer [34].

(b) Apply Cor-Ban 27L Compound, G50237 to the nut [35]. Install the nut [35] to the shaft [31].

1) Tighten the nut [35] 50 in-lb (5.6 N·m) - 100 in-lb (11.3 N·m).

(c) Install new pin [22] to nut [35].

(d) Install the crank assembly [9] and spacer [28] to the shaft [31].

(e) Apply AeroShell Grease 33, D50180 to bearing [26] and bearing [27].

(f) Install bearing [27], crank assembly [11], bearing [26], spacer [25], and, if removed, washer [24] to shaft [31].

(g) Apply Cor-Ban 27L Compound, G50237 to nut [23] and install to shaft [31].

1) Tighten the nut [23] 50 in-lb (5.6 N·m) - 100 in-lb (11.3 N·m).

(h) Install new pin [22] to the nut [23].

(i) Apply Cor-Ban 27L Compound, G50237 to the bolt [18]. Install the bolt [18], washer [19], and nut [20] to the crank [10].

1) Tighten the nut [20] 20 in-lb (2.3 N·m) above running torque.

SUBTASK 32-41-22-820-001

(3) Make sure that the clearance between the crank [10] and bus support assembly [37] is 0.015 in. (0.38 mm) - 0.050 in. (1.27 mm) (View A-A, Figure 401).

SUBTASK 32-41-22-420-002

(4) Attach the forward end of one rod assembly [7] to the short arm of the crank assembly [9]. Attach the other rod assembly [7] to the crank [10]. Install with the bolts [2], bushings [3], washers [4], and nuts [5] to attach the rod assemblies [7].

SUBTASK 32-41-22-420-003

(5) Put the brake pedal bus crank assembly [1] into the structure. Install with the bolts [14], washers [15], washers [16], and nuts [17].

NOTE: Install the washers [15] with the countersunk adjacent to the heads of the bolts [14].

SUBTASK 32-41-22-420-006

(6) On the right side only, install the screws [12] and washers [13] to connect the bracket assembly [36] to the brake pedal bus crank assembly [1].

SUBTASK 32-41-22-420-007

(7) Install the rod assemblies [8] to the crank assembly [9] and crank assembly [11] using the bolts [2], bushings [3], washers [4], and nuts [5].

SUBTASK 32-41-22-420-008

(8) Connect the aft ends of the rod assemblies [7] to the bellcrank assemblies [6] (TASK 27-21-31-400-801).

SUBTASK 32-41-22-420-009

(9) Install the brake control cables [21] to the brake pedal bus crank assembly [1] (TASK 32-41-81-400-801).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-22-820-002

(10) Do this task: Hydraulic Brake System - Adjustment, TASK 32-41-00-820-801.

SUBTASK 32-41-22-710-001

(11) Do this task: Normal and Alternate Brake Application - Functional Test, TASK 32-41-00-710-801.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-22-410-001

(1) Close this access panel:

(TASK 06-41-00-800-801)

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-41-22-860-002

(2) If necessary, set the parking brake.

SUBTASK 32-41-22-860-003

(3) If necessary, remove the chocks installed around the tires.

SUBTASK 32-41-22-860-004

(4) If necessary, remove the downlock pins installed in the nose and main landing gear (ref Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE METERING VALVE ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these three tasks:

(1) A removal of the brake metering valve

(2) An installation of the brake metering valve.

(3) A visual inspection of the brake metering valve.

C. There are two brake metering valve assemblies. There is one for each main landing gear. Each brake metering valve assembly supplies normal system braking and alternate system braking.

D. This procedure gives instructions to remove one brake metering valve assembly, it is applicable for the two brake metering valves.

E. The brake metering valves are in the aft section of the main landing gear wheel well on the ceiling.

TASK 32-41-31-000-801

2. Brake Metering Valve Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

Reference	Description
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Prepare for the Removal

SUBTASK 32-41-31-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-31-480-002

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-31-860-001

(3) Release the parking brake.

SUBTASK 32-41-31-860-002

(4) To release the pressure from the normal brake (System B) and the alternate brake (System A) hydraulic system, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-31-840-001

(5) Fully push the brake pedals 12 times to remove hydraulic pressure from the brake accumulator.

E. Brake Metering Valve Removal

SUBTASK 32-41-31-020-001

(1) Install labels on the hydraulic lines to make the installation easier.

SUBTASK 32-41-31-020-002

(2) Disconnect the hydraulic lines from the brake metering valve [1]:

SUBTASK 32-41-31-480-003

(3) Install the cap/plug, STD-14686, in the hydraulic lines and hydraulic fittings on the brake metering valve [1].

SUBTASK 32-41-31-020-003

(4) Remove the nut [10], washer [9], and bolt [8] that hold the crank to the shaft [11] on the brake metering valve [1].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

SUBTASK 32-41-31-020-004

(5) Remove the nuts [12], washers [13], washers [5], bolt [3], bolt [4], bolt [6], bolt [7], and the radius filler [2] that hold the brake metering valve [1] to the wheel well ceiling.

NOTE: The radius filler [2] is installed only on the left brake metering valve.

LOM 422-434, 437-447, 450-999

SUBTASK 32-41-31-020-008

(6) Remove the nuts [12], washers [13], washers [5], bolt [3], bolt [4], bolt [6], and the bolt [7] that hold the brake metering valve [1] to the wheel well ceiling.

LOM ALL

SUBTASK 32-41-31-020-005

(7) If the replacement brake metering valve [1] does not have hydraulic fittings installed, do these steps:

(a) Remove the adapters [20], adapter [24], adapters [29], packings [14], packings [16], packings [17], packings [19], packing [21], packing [23], and the rings [15], rings [18], ring [22] from the removed brake metering valve [1].

(b) Remove the filters [25], packings [26], packings [28], and the rings [27] from the removed brake metering valve [1].

(c) Discard the packings [14], packings [16], packings [17], packings [19], packing [21], packing [23], packings [28], and the rings [15], rings [18], ring [22], and rings [27].

SUBTASK 32-41-31-480-004

(8) Install the cap/plug, STD-14686, in the ports of the brake metering valve [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Metering Valve Installation
Figure 401/32-41-31-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT BRAKE METERING VALVE
(RIGHT BRAKE METERING VALVE IS EQUIVALENT)

B

F98079 S0006575460_V4

Brake Metering Valve Installation
Figure 401/32-41-31-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE METERING VALVE INSTALLATION

C

1 LEFT SIDE BOLT HEAD FACES FORWARD AS SHOWN, RIGHT SIDE BOLT HEAD FACES AFT

2 THE RADIUS FILLER IS INSTALLED ONLY ON THE LEFT BRAKE METERING VALVE.

F99885 S0006575461_V4

Brake Metering Valve Installation
Figure 401/32-41-31-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE METERING VALVE INSTALLATION

C

1 LEFT SIDE BOLT HEAD FACES FORWARD AS SHOWN,
RIGHT SIDE BOLT HEAD FACES AFT

2980479 S0000758525_V1

Brake Metering Valve Installation
Figure 401/32-41-31-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F98081 S0006575462_V2

Brake Metering Valve Installation
Figure 401/32-41-31-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2017015 S0000398901_V2

Brake Metering Valve Rig Pin Installation
Figure 402/32-41-31-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RIGHT BRAKE METERING VALVE

B

LEFT BRAKE METERING VALVE

C

2303869 S0000522378_V2

Brake Metering Valve Rig Pin Installation
Figure 402/32-41-31-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-31-400-801

3. **Brake Metering Valve Installation**

(Figure 401, Figure 402)

A. **References**

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-820-801	Hydraulic Brake System - Adjustment (P/B 501)
32-41-00-870-801	Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves (P/B 201)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-9118	Kit - Rigging Pin Part #: F70207-128 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Brake metering valve	32-41-31-01-135	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-005	LOM 422-434, 437-447, 450-999
14	Packing	32-41-31-01-195	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-065	LOM 422-434, 437-447, 450-999
15	Ring	32-41-31-01-185	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-055	LOM 422-434, 437-447, 450-999
16	Packing	32-41-31-01-190	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
16 (cont.)		32-41-31-02-060	LOM 422-434, 437-447, 450-999
17	Packing	32-41-31-01-175	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-045	LOM 422-434, 437-447, 450-999
18	Ring	32-41-31-01-165	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-035	LOM 422-434, 437-447, 450-999
19	Packing	32-41-31-01-170	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-040	LOM 422-434, 437-447, 450-999
21	Packing	32-41-31-01-155	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-025	LOM 422-434, 437-447, 450-999
22	Ring	32-41-31-01-145	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-015	LOM 422-434, 437-447, 450-999
23	Packing	32-41-31-01-150	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-020	LOM 422-434, 437-447, 450-999
26	Packing	32-41-31-01-210	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-080	LOM 422-434, 437-447, 450-999
27	Ring	32-41-31-01-205	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-075	LOM 422-434, 437-447, 450-999
28	Packing	32-41-31-01-215	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-31-02-085	LOM 422-434, 437-447, 450-999

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Brake Metering Valve Installation

SUBTASK 32-41-31-080-001

(1) Remove any plugs that are in the ports of the brake metering valve [1].

SUBTASK 32-41-31-420-001

(2) If the replacement brake metering valve [1] does not have hydraulic fittings installed, do these steps:

(a) Lubricate the hydraulic adapters, filters, packings, and rings with hydraulic fluid, D00153.

(b) Install the ring [18], packings [17], and packings [19] on the hydraulic adapter [20].

(c) Install the ring [22], packing [21], and packing [23] on the hydraulic adapter [24].

(d) Install the ring [15], packings [14], and packings [16] on the hydraulic adapter [29].

(e) Install the ring [27], packings [26], and packings [28] on the hydraulic filters [25].

(f) Install the fittings in the brake metering valve [1].

SUBTASK 32-41-31-420-007

(3) Use the rigging pin kit, SPL-9118, to install rig pin LGB3 (left side) or rig pin LGB4 (right side), F70207-88, from rigging pin kit, SPL-1585, through the rig pin hole for the brake metering valve [1].

SUBTASK 32-41-31-420-002

WARNING USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(4) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the bolt [3], bolt [4], bolt [6], bolt [7], washers [13], washers [5], and nuts [12] for the brake metering valve [1].

SUBTASK 32-41-31-420-003

(5) Hold the brake metering valve [1] in its position on the airplane such that the shaft [11] goes into the crank.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

SUBTASK 32-41-31-420-014

(6) Install the bolt [3], bolt [4], bolt [6], bolt [7], washers [13], washers [5], nuts [12], and the radius filler [2] to hold the brake metering valve [1] to the wheel well ceiling.

NOTE: The radius filler [2] is installed only on the left brake metering valve.

LOM 422-434, 437-447, 450-999

SUBTASK 32-41-31-420-013

(7) Install the bolt [3], bolt [4], bolt [6], bolt [7], washers [13], washers [5], and the nuts [12] to hold the brake metering valve [1] to the wheel well ceiling.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-31-420-004

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(8) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the bolt [8], washer [9], and nut [10] that hold the crank to the shaft [11].

SUBTASK 32-41-31-020-007

WARNING	INSTALL THE BOLT TO HOLD THE CRANK TO THE SHAFT OF THE BRAKE METERING VALVE WITH THE HEAD IN THE CORRECT DIRECTION. IF YOU DO NOT INSTALL THE BOLT CORRECTLY, DAMAGE TO HYDRAULIC LINES AND INJURY TO PERSONS CAN OCCUR.

(9) Install the bolt [8], washer [9], and nut [10] to hold the crank to the shaft [11] on the brake metering valve [1].

(a) For the right brake metering valve [1], make sure that the head of the bolt [8] points aft.

(b) For the left brake metering valve [1], make sure that the head of the bolt [8] points forward.

SUBTASK 32-41-31-820-001

(10) Make sure that the rig pin LGB3 or LGB4 moves freely through the rig pin hole.

(a) If you can not move the rig pin freely, adjust the brake metering valve, do this task: Hydraulic Brake System - Adjustment, TASK 32-41-00-820-801.

SUBTASK 32-41-31-080-003

(11) Remove the rig pin LGB3 or LGB4.

SUBTASK 32-41-31-080-002

(12) Remove the plugs from the hydraulic lines.

SUBTASK 32-41-31-420-005

(13) Connect the hydraulic lines [32] to the brake metering valve [1].

NOTE: Each port on the metering valve may have a marking of the designated hydraulic system, and it may not correspond to the hydraulic system used on the aircraft. Refer to Figure 401 for the correct connection.

SUBTASK 32-41-31-420-008

(14) Tighten the B-nuts on the hydraulic lines [32] to 270 ±14 in-lb (31 ±2 N·m).

SUBTASK 32-41-31-420-009

(15) Connect the hydraulic lines [33] to the brake metering valve [1].

SUBTASK 32-41-31-420-010

(16) Tighten the B-nuts on the hydraulic lines [33] to 140 ±7 in-lb (16 ±1 N·m).

SUBTASK 32-41-31-420-011

(17) Connect the hydraulic line [34], hydraulic line [35], hydraulic line [36], hydraulic line [37], and hydraulic line [38] to the brake metering valve [1].

SUBTASK 32-41-31-420-012

(18) Tighten the B-nuts on the hydraulic line [34], hydraulic line [35], hydraulic line [36], hydraulic line [37], and hydraulic line [38] to 270 ±14 in-lb (31 ±2 N·m).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-31-640-001

(19) Lubricate the two control rod end bearings [31] with grease, D00633.

G. Brake Metering Valve Installation Test

SUBTASK 32-41-31-790-001

(1) Do a leak check and an operational check of the brake metering valve for each hydraulic system, do these steps:

(a) For the normal (System B) hydraulic system:

> **WARNING** MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.
2) Fully push the captain's brake pedals twelve times.
3) Make sure that there are no leaks around the brake metering valve.
4) Check the brake wear indicators on the brakes to make sure that the brakes engaged.

(b) For the alternate (System A) hydraulic system:

> **WARNING** MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.
2) Fully push the captain's brake pedals twelve times.
3) Make sure that there are no leaks around the brake metering valve.
4) Check the brake wear indicators on the brakes to make sure that the brakes engaged.

SUBTASK 32-41-31-790-002

(2) Do a gear retract braking actuator check:

> **WARNING** MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) For the normal (System B) and the alternate (System A) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(b) Move the control lever for the landing gear to the UP position.

NOTE: Each gear door connects to each shock strut and only moves when that landing gear extends or retracts.

(c) Check the brake wear indicators on the brakes to make sure that the brakes engaged.

(d) Make sure that the valve assembly does not produce noise or unusual sound.

(e) Make sure that there are no leaks around the brake metering valve.

(f) Move the control lever for the landing gear to the DN position.

(g) Check each brake's pistons to make sure that all brakes are released.

SUBTASK 32-41-31-710-001

(3) For each hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-31-710-002

(4) Bleed the hydraulic systems:

(a) For the normal brake metering valves, do this task: Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves, TASK 32-41-00-870-801.

(b) For the alternate brake metering valves, do this task: Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves, TASK 32-41-00-870-801.

——— END OF TASK ———

TASK 32-41-31-000-802

4. Brake Metering Valve Visual Inspection

(Figure 403)

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

B. Brake Metering Valve Inspection

SUBTASK 32-41-31-210-001

(1) Do a detail visual inspection of the brake metering valve.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2364304 S0000540543_V2

Brake Metering Valve - Detailed Inspection
Figure 403/32-41-31-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR BRAKE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the main landing gear brake referred to as brake assy [1]

(2) An installation of the main landing gear brake.

TASK 32-41-41-000-801

2. Main Landing Gear Brake Removal

(Figure 401)

A. General

WARNING

MAKE SURE THAT CORRECT PERSONAL PROTECTIVE EQUIPMENT IS USED FOR EYES DURING INSTALLATION AND REMOVAL OF THE BRAKE ASSEMBLY. IF CORRECT PERSONAL PROTECTIVE EQUIPMENT IS NOT USED BRAKE DUST CAN CAUSE INJURIES TO PERSON.

(1) Brake dust can cause damage to eyes during the removal of the Main Landing Gear Brake.

B. References

Reference	Title
05-51-07-210-801	High Energy Stop (P/B 201)
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-11-000-801	Brake Disconnect Removal (P/B 401)
32-45-11-000-801	Main Landing Gear Wheel and Tire Assembly Removal (P/B 401)
32-46-21-000-801	Brake Temperature Sensor Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1816	Sling - Hot Brake, 6 Foot Mesh Length, 6 Inch Mesh Width Part #: 6T112X6 Supplier: 23755 Opt Part #: SLG35-6X72-002-01 Supplier: 10380

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-1818	Dolly - Wheel/Brake Change Part #: 15F590 Supplier: 56535 Part #: 17500M Supplier: 94861 Part #: 175S-2 Supplier: 94861 Part #: 227A-JMS Supplier: CD856 Part #: 9092-016 Supplier: 00994 Part #: IA3201A-500 Supplier: 053H3 Part #: MH13-003 Supplier: D2029 Part #: SCA150KG Supplier: R9624 Part #: STC90475-101 Supplier: 07132 Opt Part #: 175M Supplier: 94861 Opt Part #: 8436-012 Supplier: 00994 Opt Part #: 9092-010 Supplier: 00994 Opt Part #: 9092-015 Supplier: 00994 Opt Part #: PF32-002-1 Supplier: 3D5B2 Opt Part #: TB900 Supplier: 56535
COM-1823	Brake Cradle (Malabar Wheel Dolly only) Part #: BC400P Supplier: 94861 Opt Part #: BC400 Supplier: 94861
COM-1874	Bar - Tow, Dolly, Wheel and Brake Part #: 9092F Supplier: 00994
SPL-1876	Thread Protector Equipment - Axle, MLG Part #: C32022-38 Supplier: 81205 Opt Part #: C32022-15 Supplier: 81205 Opt Part #: C32022-17 Supplier: 81205 Opt Part #: C32022-23 Supplier: 81205
SPL-14320	Thread Protector Eqpt - MLG Axle (1/8 inch undersized threads) Part #: C32022-39 Supplier: 81205 Opt Part #: C32022-32 Supplier: 81205

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Removal

SUBTASK 32-41-41-840-001

(1) For ground safety precautions necessary in the handling of hot brakes, refer to this task: TASK 05-51-07-210-801.

SUBTASK 32-41-41-480-010

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-41-580-001

(3) Lift the wheel and tire assemblies with jacks until they are clear of the ground, do this task: Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801.

SUBTASK 32-41-41-020-001

(4) Do this task: Main Landing Gear Wheel and Tire Assembly Removal, TASK 32-45-11-000-801.

NOTE: This procedure will install the equipment to protect the axle. Leave the equipment installed for the brake removal in subsequent steps.

SUBTASK 32-41-41-860-007

(5) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-41-480-011

(6) Make sure that the tires for the nose landing gear and for the other main landing gear have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-41-860-008

(7) Release the parking brake.

SUBTASK 32-41-41-860-009

(8) Fully push the captain's brake pedals twelve times to remove the pressure from the brake accumulator.

F. Main Landing Gear Brake Removal

SUBTASK 32-41-41-020-002

(1) Disconnect the brake hose from the brake assy [1] at the brake disconnect:

(a) Push the barrel toward the brake and rotate the barrel clockwise to disengage the brake half from the hose half.

(b) Pull up on the barrel of the brake disconnect [3] away from the brake until the threads of the two halves are engaged.

(c) Turn the barrel counterclockwise to disconnect the brake hose from the brake assy [1].

SUBTASK 32-41-41-020-003

(2) If you will use the brake half of the brake disconnect [3] from the old brake assy [1] on a new brake assy [1], remove the brake half of the brake disconnect [3] (TASK 32-41-11-000-801).

LOM 432, 437, 438, 445, 464

SUBTASK 32-41-41-020-004

(3) Disconnect the electrical connector for the brake temperature sensor, do this task: Brake Temperature Sensor Removal, TASK 32-46-21-000-801.

SUBTASK 32-41-41-420-010

(4) If you will install a different brake assy [1] that does not have the brake temperature sensor installed, do this task: Brake Temperature Sensor Removal, TASK 32-46-21-000-801.

LOM ALL

SUBTASK 32-41-41-020-006

(5) Remove the bolt [4], washer [5], washer [6], and the nut [7] to disconnect the brake retention cable [2] from the brake assy [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-41-480-012

(6) Make sure that the axle thread protector, SPL-1876, and the thread protector, SPL-14320 (if the axle has undersized threads) are installed.

NOTE: This equipment was installed during the wheel and tire removal steps.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-020-007

(7) Do these steps to remove the steel brake assy [1]:

WARNING	DO NOT PUT FINGERS IN THE LIGHTENING HOLES OF THE WHEEL RETAINING NUT SOCKET TOOL WHEN YOU REMOVE OR INSTALL THE WHEEL RETAINING NUT. THIS CAN CAUSE INJURIES TO PERSONS.

(a) Use one of the following to remove the steel brake assy [1] from the axle.

1) wheel/brake changer dolly, COM-1818 with the optional tow bar, COM-1874 or;
2) cradle, COM-1823 and the dolly,175S-2 or;
3) Dolly, PF32-002-1 and the hot brake sling, COM-1816 or;
4) Dolly, TB900 with the cradle, COM-1823.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

SUBTASK 32-41-41-020-012

CAUTION	BE VERY CAREFUL WHEN YOU DO MAINTENANCE ON CARBON BRAKES. CARBON BRAKES ARE MORE EASILY DAMAGED THAN STEEL BRAKES. YOU CAN NOT REPAIR THEM. IF YOU LET THEM FALL OR HIT THEM, DAMAGE CAN OCCUR.

CAUTION	DO NOT APPLY FORCE TO THE CARBON BRAKE HEAT SHIELDS WHEN YOU REMOVE OR INSTALL THE CARBON BRAKES. BENT HEAT SHIELDS CANNOT BE REPAIRED. A CARBON BRAKE WITH A BENT HEAT SHIELD WILL CAUSE SCORING ON THE WHEEL INNER SURFACE WHEN THE WHEEL TURNS.

CAUTION	DO NOT PUT THE BRAKE DOWN ON THE OUTER DIAMETER OF THE ROTORS AFTER YOU REMOVE IT. CARBON BRAKES ARE NOT SERVICEABLE IF THEY HAVE NICKS, OR CRACKS. YOU CANNOT REPAIR THEM. THE WEIGHT OF THE BRAKE CAN CAUSE DAMAGE TO CARBON BRAKE ROTORS.

(8) Do these steps to remove the carbon brake assy [1] from the axle.

WARNING	DO NOT PUT FINGERS IN THE LIGHTENING HOLES OF THE WHEEL RETAINING NUT SOCKET TOOL WHEN YOU REMOVE OR INSTALL THE WHEEL RETAINING NUT. THIS CAN CAUSE INJURIES TO PERSONS.

(a) Use one of the following to remove the carbon brake assy [1] from the axle.

1) The wheel/brake changer dolly, COM-1818 with the optional tow bar, COM-1874 or;

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494 (Continued)

2) The cradle, COM-1823 and the dolly, 175S-2 or;

3) The dolly, PF32-002-1 and the hot brake sling, COM-1816 or;

4) The dolly, TB900 with the cradle, COM-1823.

LOM ALL

SUBTASK 32-41-41-160-001

(9) Remove the old grease from the axle and the sleeve [9].

SUBTASK 32-41-41-020-008

(10) If the sleeve [9] remained in the brake assy [1], remove the sleeve [9] from the brake assy [1] and install it back on the axle.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-020-009

(11) Remove and discard the grease seal [8] only if it had leaks or if the grease seal [8] looks unserviceable.

LOM ALL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR (EXAMPLE)

A

F98044 S0006575468_V3

Main Landing Gear Brake Installation
Figure 401/32-41-41-990-803 (Sheet 1 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Brake Installation
Figure 401/32-41-41-990-803 (Sheet 2 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F98879 S0006575469_V3

Main Landing Gear Brake Installation
Figure 401/32-41-41-990-803 (Sheet 3 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F98053 S0006575470_V4

Main Landing Gear Brake Installation
Figure 401/32-41-41-990-803 (Sheet 4 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3034255 S0000804208_V1

Main Landing Gear Brake Installation
Figure 401/32-41-41-990-803 (Sheet 5 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE HOSE HYDRAULIC DISCONNECT

E

(BRAKE DISCONNECT TABS ENGAGED)

F

1560017 S0000287790_V2

Main Landing Gear Brake Installation
Figure 401/32-41-41-990-803 (Sheet 6 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE)

A-A

F98106 S0006575471_V2

Main Landing Gear Brake Installation
Figure 401/32-41-41-990-803 (Sheet 7 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE)

A-A

2068659 S0000430552_V2

Main Landing Gear Brake Installation
Figure 401/32-41-41-990-803 (Sheet 8 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1560985 S0000288772_V2

Main Landing Gear Carbon Brake
Figure 402/32-41-41-990-808

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-41-400-801

3. Main Landing Gear Brake Installation

(Figure 401)

A. General

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

(1) It is only necessary to lubricate the bushing for the Main Landing Gear (MLG) brake housing with grease at brake installation. There is no scheduled requirement to lubricate the MLG brake housing. More Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, can be applied to the bushing for the MLG brake housing at the grease fittings on the brake after brake installation. If too much grease is applied, a fire can occur when the brake becomes hot.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

(2) It is only necessary to lubricate the bushing for the MLG brake housing with grease at brake installation. There is no scheduled requirement to lubricate the MLG brake housing and there is no grease fitting on the brake.

LOM ALL

WARNING MAKE SURE THAT CORRECT PERSONAL PROTECTIVE EQUIPMENT IS USED FOR EYES DURING INSTALLATION AND REMOVAL OF THE BRAKE ASSEMBLY. IF CORRECT PERSONAL PROTECTIVE EQUIPMENT IS NOT USED BRAKE DUST CAN CAUSE INJURIES TO PERSON.

(3) Brake dust can cause damage to eyes during the installation of the MLG brake.

B. References

Reference	Title
12-21-11-640-802	Main Landing Gear Lower End Components Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-870-802	Normal (System B) Hydraulic Brake System - Bleeding (P/B 201)
32-41-11-400-801	Brake Disconnect Installation (P/B 401)
32-45-11-400-801	Main Landing Gear Wheel and Tire Assembly Installation (P/B 401)
32-46-00-710-801	Brake Temperature Sensors - Operational Test of Each Sensor (P/B 501)
32-46-21-400-801	Brake Temperature Sensor Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1816	Sling - Hot Brake, 6 Foot Mesh Length, 6 Inch Mesh Width Part #: 6T112X6 Supplier: 23755 Opt Part #: SLG35-6X72-002-01 Supplier: 10380

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-1818	Dolly - Wheel/Brake Change Part #: 15F590 Supplier: 56535 Part #: 17500M Supplier: 94861 Part #: 175S-2 Supplier: 94861 Part #: 227A-JMS Supplier: CD856 Part #: 9092-016 Supplier: 00994 Part #: IA3201A-500 Supplier: 053H3 Part #: MH13-003 Supplier: D2029 Part #: SCA150KG Supplier: R9624 Part #: STC90475-101 Supplier: 07132 Opt Part #: 175M Supplier: 94861 Opt Part #: 8436-012 Supplier: 00994 Opt Part #: 9092-010 Supplier: 00994 Opt Part #: 9092-015 Supplier: 00994 Opt Part #: PF32-002-1 Supplier: 3D5B2 Opt Part #: TB900 Supplier: 56535
COM-1823	Brake Cradle (Malabar Wheel Dolly only) Part #: BC400P Supplier: 94861 Opt Part #: BC400 Supplier: 94861
COM-1874	Bar - Tow, Dolly, Wheel and Brake Part #: 9092F Supplier: 00994
SPL-1876	Thread Protector Equipment - Axle, MLG Part #: C32022-38 Supplier: 81205 Opt Part #: C32022-15 Supplier: 81205 Opt Part #: C32022-17 Supplier: 81205 Opt Part #: C32022-23 Supplier: 81205
SPL-14320	Thread Protector Eqpt - MLG Axle (1/8 inch undersized threads) Part #: C32022-39 Supplier: 81205 Opt Part #: C32022-32 Supplier: 81205

D. Consumable Materials

Reference	Description	Specification
D00233	Grease - Aircraft, General Purpose, Wide Temperature - Mobil 28	MIL-PRF-81322
D00378	Grease - Aircraft, General Purpose, Wide Temperature - Aeroshell 22	MIL-PRF-81322
D00633	Grease - Aircraft General Purpose	BMS3-33
D50005	Grease - Wheel Bearing - Mobil Aviation Grease SHC 100	
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
8	Seal	32-41-41-01-065	LOM 402, 406, 407, 412, 415, 420, 423, 424, 432, 437-439, 441, 458-460, 464
		32-41-41-51-095	LOM 402, 406, 407, 412, 415, 420, 423, 424, 432, 437-439, 441, 458-460, 464

F. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

G. Prepare for the Installation

SUBTASK 32-41-41-020-010

> **CAUTION**
> MAKE SURE THAT THE BRAKE SLEEVE IS INSTALLED BEFORE YOU INSTALL THE BRAKE. THE BRAKE SLEEVE CAN COME OFF WHEN YOU REMOVE THE BRAKE. IF YOU INSTALL THE BRAKE AND THE BRAKE SLEEVE IS NOT ON THE AXLE, DAMAGE CAN OCCUR TO THE AIRCRAFT.

(1) Make sure that the brake sleeve [9] is installed on the axle.

SUBTASK 32-41-41-480-013

(2) Make sure that the axle thread protector, SPL-1876, and the thread protector, SPL-14320 (if the axle has undersized threads) are installed on the axle.

SUBTASK 32-41-41-640-001

> **WARNING**
> APPLY GREASE TO THE BRAKE AXLE BUSHINGS. APPLY A THIN LAYER OF GREASE TO THE MATING LANDS OF THE BRAKE SLEEVE. DO NOT APPLY GREASE IN THE SPACE BETWEEN THE AXLE BUSHINGS ON THE BRAKE ASSEMBLY. REMOVE ALL UNWANTED GREASE. IF YOU APPLY TOO MUCH GREASE, A FIRE CAN OCCUR WHEN THE BRAKE BECOMES HOT. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

(3) Apply a thin layer of Mobil 28 grease, D00233, or Aeroshell 22 grease, D00378, or Mobil Aviation Grease SHC 100 grease, D50005, to the bushing [10] and mating lands of the sleeve [9] on the brake assy [1].

NOTE: This will let the brake assy slide easily onto the axle.

(a) Make sure that the grooves in the bushing [10] are completely filled with the grease.

(b) Remove all unwanted grease.

H. Main Landing Gear Brake Installation

SUBTASK 32-41-41-420-001

(1) If the brake half of the brake disconnect [3] is not installed on the brake assy [1], do this task: Brake Disconnect Installation, TASK 32-41-11-400-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 432, 437, 438, 445, 464

SUBTASK 32-41-41-420-002

(2) If the brake temperature sensor is not installed, do this task: Brake Temperature Sensor Installation, TASK 32-46-21-400-801.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-410-001

(3) If a new grease seal [8] is needed, install the grease seal [8] in the brake assy [1].

(a) Apply a thin layer of Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, to the new grease seal [8].

(b) Install the grease seal [8] in its groove next to the brake bushing [10].

LOM ALL

SUBTASK 32-41-41-410-002

(4) Apply a thin layer of grease, D00633, to the anti-torque lug of the lower torsion link pin and anti-torque slot on the brake assy [1].

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-420-003

(5) Install the steel brake assy [1] on the axle.

(a) Make sure that the anti-torque lug on the lower torsion link goes into the anti-torque slot in the brake assy [1].

WARNING DO NOT PUT FINGERS IN THE LIGHTENING HOLES OF THE WHEEL RETAINING NUT SOCKET TOOL WHEN YOU REMOVE OR INSTALL THE WHEEL RETAINING NUT. THIS CAN CAUSE INJURIES TO PERSONS.

(b) Use one of the following to install the brake assy [1] in its position on the axle:

1) wheel/brake changer dolly, COM-1818, with the optional tow bar, COM-1874 or
2) cradle, COM-1823, and dolly, 175S-2 or
3) Dolly, PF32-002-1, and hot brake sling, COM-1816 or
4) Dolly, TB900, with the cradle, COM-1823.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

SUBTASK 32-41-41-420-012

CAUTION BE VERY CAREFUL WHEN YOU DO MAINTENANCE ON CARBON BRAKES. CARBON BRAKES ARE MORE EASILY DAMAGED THAN STEEL BRAKES. YOU CAN NOT REPAIR THEM. IF YOU LET THEM FALL OR HIT THEM, DAMAGE CAN OCCUR.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494 (Continued)

(CAUTION PRECEDES)

CAUTION	DO NOT APPLY FORCE TO THE CARBON BRAKE HEAT SHIELDS WHEN YOU REMOVE OR INSTALL THE CARBON BRAKES. BENT HEAT SHIELDS CANNOT BE REPAIRED. A CARBON BRAKE WITH A BENT HEAT SHIELD WILL CAUSE SCORING ON THE WHEEL INNER SURFACE WHEN THE WHEEL TURNS.

CAUTION	DO NOT PUT THE BRAKE DOWN ON THE OUTER DIAMETER OF THE ROTORS AFTER YOU REMOVE IT. CARBON BRAKES ARE NOT SERVICEABLE IF THEY HAVE NICKS, OR CRACKS. YOU CANNOT REPAIR THEM. THE WEIGHT OF THE BRAKE CAN CAUSE DAMAGE TO CARBON BRAKE ROTORS.

(6) Install the carbon brake assy [1] on the axle.

(a) Make sure that the anti-torque lug on the lower torsion link goes into the anti-torque slot in the brake assy [1].

NOTE: There is no requirement to install a grease seal.

WARNING	DO NOT PUT FINGERS IN THE LIGHTENING HOLES OF THE WHEEL RETAINING NUT SOCKET TOOL WHEN YOU REMOVE OR INSTALL THE WHEEL RETAINING NUT. THIS CAN CAUSE INJURIES TO PERSONS.

(b) Use one of the following steps to install the carbon brake assy [1] in its position on the axle:

1) wheel/brake changer dolly, COM-1818, with the optional tow bar, COM-1874 or
2) cradle, COM-1823, and dolly, 175S-2 or
3) Dolly, PF32-002-1, and hot brake sling, COM-1816 or
4) Dolly, TB900 , with the cradle, COM-1823.

LOM ALL

SUBTASK 32-41-41-410-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(7) Apply a layer of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the bolt [4], washer [5], washer [6], and nut [7] for the brake retention cable [2].

SUBTASK 32-41-41-410-004

(8) Install the bolt [4], washer [5], washer [6], and nut [7] to connect the brake retention cable [2] to the brake assy [1].

SUBTASK 32-41-41-420-004

(9) Connect the brake hose to the brake assy [1] at the brake disconnect [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Install the hose half of the brake disconnect [3] on the brake half of the brake disconnect [3].

1) Turn the hose half of the brake disconnect [3] until the internal tangs align with the slots inside the brake half of the brake disconnect [3] and you can push the hose half down.

2) Push down on the barrel and turn it clockwise to engage the threads.

3) Turn the barrel clockwise until the slots in the bottom of the barrel snap onto the external tangs on the brake half of the brake disconnect [3].

4) Make sure that the elbow fitting on the brake disconnect is parallel to the oleo centerline or up to ten degrees toward the shock strut to avoid hoses rubbing on the brake housing.

SUBTASK 32-41-41-210-014

(10) Do a visual check to make sure that the slots on the barrel are fully and correctly engaged with the tangs on the brake half of the brake disconnect [3].

SUBTASK 32-41-41-420-013

(11) Make sure that the brake hose B-nut is tightened (TASK 32-41-11-400-801).

SUBTASK 32-41-41-420-005

(12) Visually check the two halves of the brake disconnect [3] to make sure that they are correctly engaged.

LOM 432, 437, 438, 445, 464

SUBTASK 32-41-41-420-006

(13) Connect the electrical connector for the brake temperature sensor.

LOM ALL

SUBTASK 32-41-41-420-007

(14) Do this task: Main Landing Gear Wheel and Tire Assembly Installation, TASK 32-45-11-400-801.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-640-002

WARNING DO NOT APPLY TOO MUCH GREASE TO THE LANDING GEAR BRAKE HOUSING BUSHINGS. A FIRE CAN OCCUR WHEN THE BRAKE BECOMES HOT. FIRE CAN CAUSE INJURIES TO PERSONNEL.

CAUTION DO NOT LUBRICATE THE FITTING WITH TOO MUCH GREASE. TOO MUCH GREASE CAN CAUSE A FIRE.

(15) Lubricate the main landing gear brake housing bushing with Aeroshell 22 grease, D00378, Mobil Aviation Grease SHC 100 grease, D50005, or Mobil 28 grease, D00233, using the grease fittings, if installed, after brake installation only (TASK 12-21-11-640-802).

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

I. Main Gear Wheel Brakes Bleeding and Installation Test

LOM 432, 437, 438, 445, 464

SUBTASK 32-41-41-420-011

(1) To do a test of the brake temperature sensors, do this task: Brake Temperature Sensors - Operational Test of Each Sensor, TASK 32-46-00-710-801.

NOTE: A minimum one person must be near the main landing gear brakes.

(a) Operate the brake pedal as needed to check the operation of each brake.

LOM ALL

SUBTASK 32-41-41-860-011

> **WARNING**
> KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(2) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-41-790-005

(3) Do these steps to do an operational check of all four brakes:

(a) Push one set of brake pedals to the limit of travel to fully operate each brake assy [1].

(b) Set the parking brake.

(c) Monitor the movement of each brake's pistons or wear pins to make sure that each brake assy [1] engaged.

(d) Wait two minutes.

(e) Look for leaks around each brake assy [1] and at each brake disconnect [3].

(f) Release the parking brake.

(g) Monitor the movement of each brake's pistons or wear pins to make sure that each brake assy [1] released.

SUBTASK 32-41-41-870-002

(4) If the brakes do not feel normal, do this task: Normal (System B) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-802.

J. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-41-860-012

(1) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-41-580-002

> **WARNING**
> MAKE SURE THAT THE AREA BELOW THE TIRES IS CLEAR OF PERSONS AND EQUIPMENT. IF THE AREA IS NOT CLEAR, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Lower the wheel and tire assemblies and remove the jacks.

NOTE: Use the jack manufacturer's instructions to lower the airplane off the jacks.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR BRAKE - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) An examination of the brakes for wear

(2) A fast check of the main gear wheel brakes (wheel installed on the airplane)

(3) A check of the main gear wheel brakes (wheel removed from the airplane).

TASK 32-41-41-700-801

2. Examine the Brakes for Wear

(Figure 601 or Figure 602)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Prepare for the Procedure

SUBTASK 32-41-41-480-002

WARNING MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-41-480-003

(2) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-41-860-001

(3) Release the parking brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-41-790-001

WARNING	KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) For the hydraulic system B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

D. Examine the Brakes for Wear

SUBTASK 32-41-41-210-009

(1) Do these steps to examine the brakes for wear:

(a) Fully push the captain's left and right brake pedals and hold.

NOTE: You can set the parking brake to hold the brake pedals.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

(b) For each brake [4] (4 locations), make sure that the wear indicator pins [2] extend out of the indicator guides [3].

NOTE: For accuracy, the wear indicator pins should be checked after the brakes have cooled.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1441 OR POST SB 737-32-1429; LOM 427, 428 PRE SB 737-32-1494

(c) For each carbon brake [29] (4 locations), make sure that the wear indicator pins [31] extend out of the guides [33].

NOTE: For accuracy, the wear indicator pins should be checked after the brakes have cooled.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

(d) Replace the brake [4] if the end of a wear indicator pins [2] is level with, or below the face of an indicator guides [3].

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1441 OR POST SB 737-32-1429; LOM 427, 428 PRE SB 737-32-1494

(e) Replace the carbon brake [29] if the end of a wear indicator pins [31] is level with, or below the face of a guides [33].

LOM ALL

(f) Use the feeler gage to make sure that the axial free play is not more 0.03 in. (0.76 mm) from the bottom of the nut [7] to the brake lug [8].

1) If the axial free play is more 0.03 in. (0.76 mm), tighten the nut [7].

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-41-860-002

(1) For the hydraulic system B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G11069 S0006575475_V7

Main Landing Gear Brake Inspection (Wheel Installed)
Figure 601/32-41-41-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Brake Inspection (Wheel Installed)
Figure 601/32-41-41-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

MAIN LANDING GEAR

A

2062003 S0000421824_V5

Main Landing Gear Carbon Brake Inspection (Wheel Installed)
Figure 602/32-41-41-990-809 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR

A

3034179 S0000804215_V3

Main Landing Gear Carbon Brake Inspection (Wheel Installed)
Figure 602/32-41-41-990-809 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-41-700-802

3. Main Landing Gear Brake Fast Check (Wheel Installed on the Airplane)

(Figure 601 or Figure 602)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Prepare for the Check

SUBTASK 32-41-41-480-005

> **WARNING** MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-41-480-006

(2) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-41-860-003

(3) Release the parking brake.

SUBTASK 32-41-41-790-002

> **WARNING** KEEP PERSONNEL AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

D. Main Landing Gear Brake Fast Check

SUBTASK 32-41-41-860-004

(1) Fully apply and release the left and right captain's or first officer's brake pedals five times.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-860-013

(2) With the brake pedals not applied, do a check of the brakes for fluid leaks at these locations:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) brake pistons [5]

(b) brake disconnect [1]

(c) brake housing ports

(d) inlet and drain ports

(e) bleed ports.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

SUBTASK 32-41-41-860-014

(3) With the brake pedals not applied, do a check of the brakes for fluid leaks at these locations:

(a) brake pistons [30]

(b) brake disconnect [32]

(c) brake housing ports

(d) inlet and drain ports

(e) bleed ports.

LOM ALL

SUBTASK 32-41-41-790-003

(4) If the total leakage per brake at the above locations is greater than 1 drop/minute with the brake pedals not applied, repair the leak(s) or replace the brake prior to dispatch.

SUBTASK 32-41-41-720-001

(5) Slowly apply the brake pedals to the stops.

NOTE: You can set the parking brake to hold the brake pedals.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-790-006

(6) While you apply the brake pedals, do a check of the brakes for fluid leaks at these locations:

(a) brake pistons [5]

(b) brake disconnect [1]

(c) brake housing ports

(d) inlet and drain ports

(e) bleed ports.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

SUBTASK 32-41-41-790-011

(7) While you apply the brake pedals, do a check of the brakes for fluid leaks at these locations:

(a) brake pistons [30]

(b) brake disconnect [32]

(c) brake housing ports

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494 (Continued)

(d) inlet and drain ports

(e) bleed ports.

LOM ALL

SUBTASK 32-41-41-790-007

(8) If the total leakage per brake at the above locations is greater than five drops/minute while the brakes are being applied, repair the leak(s) or replace the brake prior to dispatch.

SUBTASK 32-41-41-790-008

(9) Brakes with leaks below these limits must be rechecked prior to each flight, and should be repaired or replaced at the next maintenance opportunity that manpower and material allow.

SUBTASK 32-41-41-790-009

(10) The brake must be removed, inspected and cleaned in accordance with the brake supplier component maintenance manual if it is suspected that a brake has been exposed to significant levels of contamination. Signs of contamination include a wet or oily appearance, buildup of charred residue, or heavy smoke after landing.

SUBTASK 32-41-41-790-010

(11) Release the captain's brake pedals (or parking brake).

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-790-004

(12) Do a check for missing brake wear indicator pins [2].

NOTE: Each brake has two brake wear indicator pins.

(a) If the two wear indicator pins [2] are missing, you must replace the brake [4] prior to the next flight.

(b) If one wear indicator pin [2] is missing, then the brake [4] can stay in service if the remaining wear indicator pin operation is satisfactory.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

SUBTASK 32-41-41-911-001

(13) Do a check for missing brake wear indicator pins [31].

NOTE: Each brake has two brake wear indicator pins.

(a) If the two wear indicator pins [31] are missing, you must replace the carbon brake [29] prior to the next flight.

(b) If one wear indicator pin [31] is missing, then the carbon brake [29] can stay in service if the remaining wear indicator pin operation is satisfactory.

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-210-002

(14) Examine all of the brakes [4] for these conditions:

(a) broken parts

(b) inconsistent appearance/form, distortion

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) parts that show a large amount of wear

(d) other damage that can cause a malfunction or a leak.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

SUBTASK 32-41-41-210-010

(15) Examine all of the visible portions of the carbon brakes [29] for these conditions:

(a) chips

(b) cracks or broken parts that are visible

(c) severe oxidation exhibited by porosity

(d) inconsistent appearance/form, distortion

(e) softness and/or exposed fibers

(f) parts that show a large amount of wear

(g) other damage that can cause a malfunction or a leak.

LOM ALL

SUBTASK 32-41-41-220-001

(16) Use the feeler gage to make sure that the axial free play is not more 0.03 in. (0.76 mm) from the bottom of the nut [7] to the brake lug [8].

(a) If the axial free play is more 0.03 in. (0.76 mm), tighten the nut [7].

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-41-860-005

(1) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

——— END OF TASK ———

TASK 32-41-41-700-803

4. Main Landing Gear Brake Check (Wheel Removed from the Airplane)

(Figure 603 or Figure 604 or Figure 605 or Figure 606)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

Reference	Description
STD-765	Scraper - Plastic

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Zone	Area
744	Right Main Landing Gear

D. Prepare for the Check

SUBTASK 32-41-41-480-008

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-41-480-009

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-41-860-006

(3) Release the parking brake.

E. Main Landing Gear Brake Check (Wheel Removed from the Airplane)

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-41-41-210-003

(1) For each brake (4 locations), do a check for these conditions:

(a) Cracks.

(b) Broken parts.

(c) Distortion.

(d) Parts that show too much wear.

(e) Loose rotor drive clips.

(f) Pieces of that have broken off of the rotor disks or stator disks.

(g) Damage that can cause a malfunction or a leak.

(h) Corrosion on and around the brake.

1) Make sure that the surface finishes are in good condition.

NOTE: Corrosion can occur quickly in some climates.

(i) Do a check for missing brake wear indicator pins.

NOTE: Each brake has two brake wear indicator pins.

1) If the two wear indicator pins are missing, replace the brake prior to the next flight.

2) If one wear indicator pin is missing, the brake can stay in service if the remaining wear indicator pin operation is satisfactory.

(j) Look for the same brake running clearance between the pressure plate and the first rotor assembly at four equally spaced distances around the brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

SUBTASK 32-41-41-210-007

WARNING	MAKE SURE THAT THE BRAKE TEMPERATURES DECREASE TO WHERE IT DOES NOT CAUSE INJURY. YOU CAN PUT FANS ADJACENT TO THE BRAKE ASSEMBLY TO DECREASE TEMPERATURES QUICKLY. HOT BRAKES CAN CAUSE DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL.

(2) Visually examine the brake assembly for these types of damage once the temperature of the brake has cool down sufficiently (Figure 604 or Figure 605 or Figure 606).

(a) Rotate each rotor by hand to visually inspect each rotor clip for cracks and missing rivets.

1) Make sure that there is no binding.

(b) Broken and damaged parts.

(c) Parts that show a large quantity of worn areas.

(d) Other damage that can cause worn areas, or leaks of hydraulic fluid.

(e) Remove the brake if these conditions exist.

SUBTASK 32-41-41-210-015

(3) Do a check for missing brake wear indicator pins (Figure 604 or Figure 605 or Figure 606).

NOTE: Each brake has two brake wear indicator pins.

(a) If the two wear indicator pins are missing, replace the carbon brake before the next flight.

(b) If one wear indicator pin is missing, the carbon brake can stay in service, if the remaining wear indicator pin operation is satisfactory.

SUBTASK 32-41-41-210-016

(4) Do a check for corrosion on or around the carbon brake.

(a) Make sure that the surface finishes are in good condition.

NOTE: Corrosion can occur quickly in some climates.

SUBTASK 32-41-41-210-017

(5) Do a check for approximately the same brake running clearance between each brake piston and pressure plate (View A-A, Figure 604 or Figure 605 or Figure 606).

(a) With the brake released, visually check to make sure that there is clearance between each brake piston and pressure plate.

NOTE: A running clearance of 0.05 in. (1.27 mm) is permitted.

SUBTASK 32-41-41-210-012

(6) Check the visible areas of the brake heat sink (rotors, stators, pressure plate, and end plate) for oxidation damage (Figure 604 or Figure 605 or Figure 606).

(a) Replace the carbon brakes if these conditions exist (Figure 604 or Figure 605 or Figure 606).

1) Examine the brakes for indentations or flaking carbon where the hydraulic brake pistons touch the carbon pressure plate.

2) Examine the brake and surrounding areas for unusual carbon debris such as chips or small pieces of carbon broken off of the rotors and stators.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3) Make sure that the metal rotor drive clips on the outside diameter of each carbon rotor do not show excessive movement and there is no loose flaking carbon near the clips.

(b) Do a check for loose rotor drive clips and rivets.

(c) Do a check for pieces of carbon that have broken off the carbon disks.

(d) Do a check of the outside diameter of the stator disks for the correct 12 o'clock positions of their alignment grooves (Figure 604 or Figure 605 or Figure 606).

NOTE: Most carbon brakes are configured with worn stator indicators. A worn stator indicator is a line machined in the stator at the 12 o'clock position of the heatsink. If this indicator is available on the heatsink, the indicator can be used as a visual reference to make sure that the stator does not rotate more than 0.25 in. (0.64 cm).

NOTE: A stator groove that is not aligned is an indication of possible stator disk drive failure.

NOTE: Manufacturing of alignment markings vary from brake supplier to brake supplier, not all brake assemblies have this indicator.

1) With one hand at the 3 o'clock position and the other hand at the 9 o'clock position, rotate each stator individually and see that the stator does not move more than 0.25 in. (0.64 cm) as measured on the outside diameter of the adjacent stators.

2) Replace the brake if any of the stators can be moved by hand beyond 0.25 in. (0.64 cm).

(e) If the carbon material in a damaged area is soft, flaking, or can be easily removed with a fingernail or plastic scraper, STD-765, replace the brake.

NOTE: Carbon brake oxidation causes softness, flaking, and pieces to break off of the rotors and stators. Stains that are brown or orange are initial indications of possible oxidation. Oxidation damage normally occurs on the outside diameters of rotors and stators and non-wear surfaces of pressure plate and end plate and is easy to see. Oxidation damage can also occur on the inner diameter of the rotors and stators, end plate and pressure plate.

SUBTASK 32-41-41-210-013

(7) Damage such as nicks, scratches, and gouges in the carbon that do not have cracks are acceptable provided that the carbon is not soft or flaking and cannot be scraped off with a fingernail or plastic scraper, STD-765.

LOM 432, 437, 438, 445, 464

SUBTASK 32-41-41-210-005

(8) Do a check on the brake temperature sensor, connector, and wire for correct installation and sign of damage or corrosion.

LOM ALL

SUBTASK 32-41-41-220-002

(9) Use the feeler gage to make sure that the axial free play is not more 0.03 in. (0.76 mm) from the bottom of the nut [7] to the brake lug [8].

(a) If the axial free play is more 0.03 in. (0.76 mm), tighten the nut [7].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-41-960-001

(10) If the degree of the conditions that are seen on the brake during the above inspections are significant enough, then replacement of the brake is necessary.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G11155 S0006575478_V6

Main Landing Gear Brake Inspection (Wheel Removed)
Figure 603/32-41-41-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3034414 S0000804216_V4

Main Landing Gear Brake Inspection (Wheel Removed)
Figure 603/32-41-41-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR CARBON BRAKE

A

1558484 S0000283788_V6

Main Landing Gear Carbon Brakes Inspection (Wheel Removed)
Figure 604/32-41-41-990-806 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3034368 S0000804218_V4

Main Landing Gear Carbon Brakes Inspection (Wheel Removed)
Figure 604/32-41-41-990-806 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STATOR DISK
(OXIDATION DAMAGE ON OUTSIDE DIAMETER)
(EXAMPLE)

B

STATOR DRIVE LUGS
(OXIDATION DAMAGE ON INSIDE DIAMETER)
(EXAMPLE)

B

3045188 S0000812179_V1

Main Landing Gear Carbon Brakes Inspection (Wheel Removed)
Figure 604/32-41-41-990-806 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ROTOR DISK
(OXIDATION DAMAGE ON OUTSIDE DIAMETER)
(EXAMPLE)

C

ROTOR DISK
(OXIDATION DAMAGE ON OUTSIDE DIAMETER)
(EXAMPLE)

C

3045189 S0000812180_V1

Main Landing Gear Carbon Brakes Inspection (Wheel Removed)
Figure 604/32-41-41-990-806 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ROTOR DRIVE CLIP
(ROTOR CLIP BROKEN, MISSING, OR LOOSE)
(EXAMPLE)

D

PRESSURE PLATE
(OXIDATION DAMAGE ON THRUST FACE)
(EXAMPLE)

E

3045190 S0000812181_V1

Main Landing Gear Carbon Brakes Inspection (Wheel Removed)
Figure 604/32-41-41-990-806 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CARBON BRAKE

A

1561456 S0000289315_V3

CARBON BRAKE
Figure 605/32-41-41-990-807 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUNNING CLEARANCE
(EXAMPLE)

A-A

CLIP AND RIVET
(EXAMPLE)

B

3073217 S0000832643_V1

CARBON BRAKE
Figure 605/32-41-41-990-807 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 STATOR GROOVES THAT ARE PROPERLY ALIGNED INDICATE A GOOD STATOR LUG
2 STATOR GROOVES THAT DO NOT ALIGN INDICATE A DAMAGED STATOR LUG

3073213 S0000832633_V1

Stator Indicator
Figure 606/32-41-41-990-810

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR BRAKE SLEEVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the brake sleeve [2] for the main landing gear

(2) An installation of the brake sleeve [2] for the main landing gear.

TASK 32-41-42-000-801

2. Main Landing Gear Brake Sleeve Removal

(Figure 401)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1864	Puller Equipment - Axle Sleeve Assembly, MLG Part #: C32032-125 Supplier: 81205 Opt Part #: C32032-98 Supplier: 81205

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-41-42-580-001

(1) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

E. Main Landing Gear Brake Sleeve Removal

SUBTASK 32-41-42-020-001

(1) Do this task: Main Landing Gear Brake Removal, TASK 32-41-41-000-801.

NOTE: This procedure will also remove the wheel and tire assemblies.

SUBTASK 32-41-42-020-002

> **CAUTION**
> DO NOT APPLY TOO MUCH FORCE WHEN YOU REMOVE THE BRAKE SLEEVE. IF YOU USE TOO MUCH FORCE, DAMAGE TO THE AIRPLANE AND THE SUPPORT EQUIPMENT CAN OCCUR.

(2) Do these steps to remove the brake sleeve [2] from the axle assembly [1]:

(a) Remove the brake sleeve [2]. Use puller equipment, SPL-1864.

NOTE: Applied heat can decrease the force necessary for the removal.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

L23918 S0006574963_V2

Main Landing Gear Brake Sleeve Installation
Figure 401/32-41-42-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Brake Sleeve Installation
Figure 401/32-41-42-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-42-420-801

3. Main Landing Gear Brake Sleeve Installation

(Figure 401)

A. References

Reference	Title
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Sleeve	32-11-85-01A-050	LOM ALL

D. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Installation

SUBTASK 32-41-42-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

F. Main Landing Gear Brake Sleeve Installation

SUBTASK 32-41-42-420-001

(1) Do the following steps to install the brake sleeve [2]:

(a) Apply a light coating of grease, D00633 to the lands of the axle assembly [1] and axle sleeve [3], where the brake sleeve [2] inside diameters set.

(b) Heat the brake sleeve [2] to 375 ±25°F (191 ±14°C).

(c) Install the brake sleeve [2] on the axle assembly [1] and the axle sleeve [3].

NOTE: The brake sleeve will rapidly shrink to normal size and seize the axle, preventing further movement.

SUBTASK 32-41-42-420-002

(2) Do this task: Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: This procedure will also install the wheel and tire assemblies.

NOTE: Make sure you connect the correct wires to the correct in-axle assembly.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-42-580-002

(1) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

HYDRAULIC BRAKE ACCUMULATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the hydraulic brake accumulator

(2) An installation of the hydraulic brake accumulator

(3) A removal of the brake accumulator pressure gage

(4) An installation of the brake accumulator pressure gage

B. The brake accumulator is above the Aft Wing To Body Fairing Panel, 194DR, which is aft of the right wheel well.

C. The brake accumulator pressure gage is installed on the aft of the right wheel well.

TASK 32-41-51-000-801

2. Hydraulic Brake Accumulator Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
194DR	Aft Wing To Body Fairing Panel

D. Prepare for the Removal

SUBTASK 32-41-51-480-001

> **WARNING**
> MAKE CERTAIN THAT LANDING GEAR DOWNLOCK PINS ARE INSTALLED. PINS NOT INSTALLED MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-51-480-002

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-51-860-001

(3) Release the parking brake.

SUBTASK 32-41-51-010-001

(4) To get access to the brake accumulator [1], do this step:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Open this access panel:

Number	Name/Location
194DR	Aft Wing To Body Fairing Panel

SUBTASK 32-41-51-860-002

(5) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-51-870-001

(6) Fully push the brake pedals 12 times to remove the hydraulic pressure from the brake accumulator.

SUBTASK 32-41-51-870-002

(7) Do these steps to remove the gas pressure from the brake accumulator [1]:

(a) Remove the cap [6] from the charging valve [8].

> **WARNING** MAKE SURE THAT YOU LOOSEN THE SWIVEL NUT FOR THE AIR VALVE A MAXIMUM OF TWO TURNS. AIR PRESSURE CAN BLOW THE VALVE OFF AND CAN CAUSE INJURY TO PERSONS.

(b) Loosen the swivel nut [7] on the charging valve [8] a maximum of one complete turn counter-clockwise to release the gas pressure from the brake accumulator [1].

E. Brake Accumulator Removal

SUBTASK 32-41-51-020-001

(1) Do these steps to remove the brake accumulator [1]:

(a) Disconnect the hydraulic line from the forward end of the brake accumulator [1].

(b) Install a plug on the hydraulic line and a cap on the hydraulic port of the brake accumulator [1].

(c) Disconnect the gas line from the aft end of the brake accumulator [1].

(d) Install a plug on the gas line and a cap in the gas port of the brake accumulator [1].

(e) Loosen the clamp nuts for the accumulator clamps (two locations).

(f) Open the clamps.

(g) Remove the brake accumulator [1] from the airplane.

SUBTASK 32-41-51-020-002

(2) If the brake accumulator [1] you will install does not have the reducer [3] and the reducer [5] installed, do these steps:

(a) Remove the reducer [3] and the reducer [5] from the brake accumulator [1].

(b) Remove and discard the packing [2] and the packing [4] from the applicable fitting.

SUBTASK 32-41-51-480-003

(3) Install plugs in the ports of the brake accumulator [1].

——— END OF TASK ———

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F64122 S0006575482_V2

Hydraulic Brake Accumulator Installation
Figure 401/32-41-51-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

GAS PORT OF THE BRAKE ACCUMULATOR

B

FLUID PORT OF THE BRAKE ACCUMULATOR

C

F64124 S0006575483_V2

Hydraulic Brake Accumulator Installation
Figure 401/32-41-51-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F64125 S0006575484_V5

Hydraulic Brake Accumulator Installation
Figure 401/32-41-51-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE ACCUMULATOR PRESSURE GAGE

E

1931929 S0000365291_V2

Hydraulic Brake Accumulator Installation
Figure 401/32-41-51-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-51-420-801

3. **Hydraulic Brake Accumulator Installation**

(Figure 401)

A. **References**

Reference	Title
12-15-11-420-801	Hydraulic Brake Accumulator Servicing (P/B 301)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-41-00-870-801	Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves (P/B 201)

B. **Consumable Materials**

Reference	Description	Specification
D00054	Fluid - Hydraulic Assembly Lubricant - MCS 352B (Formerly Monsanto MCS 352B)	
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G01505	Lockwire - Safety And Lock	NASM20995
G50356	Lockwire - MS20995C47, Corrosion Resistant Steel - 0.047 Inch (1.1938 mm) Diameter	NASM20995

C. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Brake accumulator	32-41-51-01-045	LOM ALL
2	Packing	32-41-51-01-035	LOM ALL
4	Packing	32-41-51-01-040	LOM ALL
20	Packing	29-21-52-05B-053	LOM 422-434, 437-447, 450-999
		32-41-51-06-035	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

D. **Location Zones**

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

E. **Access Panels**

Number	Name/Location
194DR	Aft Wing To Body Fairing Panel

F. **Brake Accumulator Installation**

SUBTASK 32-41-51-020-003

(1) Remove the caps or plugs from the ports of the brake accumulator [1].

SUBTASK 32-41-51-410-001

(2) If the reducer [3] and reducer [5] are not installed in the brake accumulator [1], do these steps:

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(a) Lubricate the new packing [2], new packing [4], reducer [3], and reducer [5] with hydraulic fluid, D00153, or MCS 352B fluid, D00054.

(b) For the GAS end of the brake accumulator [1]:

1) Install the new packing [2] on the reducer [3].

2) Install the reducer [3] in the GAS PORT of the brake accumulator [1].

3) Tighten the reducer [3] to 180 in-lb (20.34 N·m) - 200 in-lb (22.60 N·m).

(c) For the HYDRAULIC end of the brake accumulator [1]:

1) Install the new packing [4] on the reducer [5].

2) Install the reducer [5] in the FLUID PORT of the brake accumulator [1].

3) Tighten the reducer [5] to 855 in-lb (96.60 N·m) - 945 in-lb (106.77 N·m).

SUBTASK 32-41-51-420-001

(3) Do the steps that follow to install the brake accumulator [1]:

(a) Align the gas line with the reducer [3] on the brake accumulator [1] when you put the brake accumulator [1] in its position in the clamps.

(b) Tighten the clamp nuts.

(c) Connect the gas line from the charging valve [8] to the GAS PORT of the brake accumulator [1].

(d) Connect the hydraulic line to the FLUID PORT of the brake accumulator [1].

SUBTASK 32-41-51-420-002

(4) Do the steps that follow to put the brake accumulator [1] back to its usual condition:

(a) Do this task: Hydraulic Brake Accumulator Servicing, TASK 12-15-11-420-801.

1) Make sure that the cap [6] is installed on the charging valve [8] and it has lockwire, G01505 (TASK 20-10-44-400-801).

WARNING

KEEP PERSONNEL AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(b) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Make sure that the gages for normal (System B) hydraulic system and the brake accumulator [1] indicate approximately 3000 psig (3000 psi).

(d) Make sure that there is no leak at the connection for the hydraulic line on the brake accumulator [1].

(e) Apply a soap solution to the connection at the charging line.

1) Examine the connection for air bubbles.

(f) If leakage is detected at the charging valve [8], do the following steps to remove and replace the charging valve [8]:

1) Make sure that the hydraulic reservoirs have been depressurized before you remove the charging valve [8] (TASK 29-09-00-860-802).

2) Remove the cap [6] on the charging valve [8] then slowly unscrew the swivel nut [7] to release any residual air pressure.

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3) Remove lockwire from the charging valve [8] and manifold assembly.
4) Remove the charging valve [8] from the manifold assembly.
5) Remove and discard the packing [20] from the charging valve [8].
6) Lubricate the new packing [20] with MCS 352B fluid, D00054, or hydraulic fluid, D00153.
7) Install the new packing [20] onto the charging valve [8].
8) Install the charging valve [8] in manifold assembly port.
   a) Tighten the charging valve [8] to 100 in-lb (11 N·m) - 110 in-lb (12 N·m).
9) Install MS20995C47 lockwire, G50356, to the charging valve [8] and manifold assembly with the double twist method.
10) Install the cap [6] and tighten swivel nut [7] on the charging valve [8].
11) Pressurize the pneumatic crossover manifold duct.
12) Use a solution of soap and water to make sure that no air leaks are at the charging valve [8].
13) Release pressure from the pneumatic cross manifold duct.

(g) To bleed the normal (System B) hydraulic system, do this task: Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves, TASK 32-41-00-870-801.

G. Brake Accumulator Installation Test

SUBTASK 32-41-51-420-003

(1) Do these steps to do an operational check of the brake accumulator [1].
   (a) Release pressure from the normal (System B) hydraulic system, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.
   (b) Push and release the brake pedals fully a minimum of seven times.
   (c) Monitor the movement of the brake-wear indicators on each brake to make sure that the brakes work properly.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-51-010-003

(1) Close this access panel:

Number	Name/Location
194DR	Aft Wing To Body Fairing Panel

SUBTASK 32-41-51-860-007

(2) Set the parking brake.

END OF TASK

TASK 32-41-51-000-803

4. Brake Accumulator Pressure Gage Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

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B. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Removal

SUBTASK 32-41-51-480-004

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-51-480-005

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-51-860-004

(3) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-51-860-005

(4) Release the parking brake.

SUBTASK 32-41-51-860-006

(5) Fully push the captain's brake pedals 12 times to remove the hydraulic pressure from the brake accumulator.

SUBTASK 32-41-51-840-001

(6) Do these steps to remove the gas pressure from the brake accumulator:

(a) Remove the cap [6] from the brake accumulator charging valve [8].

> **WARNING** DO NOT LET THE VALVE TURN WITH THE SWIVEL NUT. THE PRESSURE IN THE ACCUMULATOR WILL DISENGAGE THE VALVE WITH EXPLOSIVE FORCE. INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(b) Loosen the swivel nut [7] on the charging valve [8] a maximum of one complete turn counter-clockwise to release the gas pressure from the brake accumulator [1].

(c) Make sure that the gage assembly [9] for the brake accumulator goes to zero.

SUBTASK 32-41-51-020-004

(7) Do these steps to remove the gage assembly [9].

(a) Disconnect the gas line [10] from the gage assembly [9].

(b) Install a plug on the gas line [10].

(c) Remove the screws [11], washers [12], washers [13], and washers [14] from the airplane.

(d) Remove the shield [16] from the airplane.

(e) Remove the washers [13], washers [14], and spacers [15].

(f) Remove the gage assembly [9] from the airplane.

1) Remove the flange [18] from the gage assembly [9].

(g) Put a cap on the union [19] on the gage.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-51-020-005

(8) If the replacement gage assembly [9] does not have a union [19] installed, then do these steps:

(a) Remove the union [19] and packing [17] from the port of the gage.

(b) Discard the packing [17].

END OF TASK

TASK 32-41-51-420-802

5. **Brake Accumulator Pressure Gage Installation**

Figure 401

A. References

Reference	Title
12-15-11-420-801	Hydraulic Brake Accumulator Servicing (P/B 301)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
32-41-00-870-801	Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00054	Fluid - Hydraulic Assembly Lubricant - MCS 352B (Formerly Monsanto MCS 352B)	
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G01505	Lockwire - Safety And Lock	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
9	Gage assembly	32-41-51-06-115	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-51-07-045	LOM 422-434, 437-447, 450-999
17	Packing	32-41-51-06-050	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-51-07-050	LOM 422-434, 437-447, 450-999

D. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

E. Brake Accumulator Pressure Gage Installation

SUBTASK 32-41-51-080-001

(1) Remove the cap or plug from the port of the gage assembly [9] and the gas line [10].

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SUBTASK 32-41-51-420-004

(2) If the replacement gage assembly [9] does not have a union [19] installed in the port, then do these steps:

(a) Lightly lubricate new packing [17], the threads of gage assembly [9] and the threads of union [19] with hydraulic fluid, D00153 or MCS 352B fluid, D00054 (alternative).

(b) Install the new packing [17] on to the union [19].

(c) Install the union [19] on the port of the gage.

SUBTASK 32-41-51-420-005

(3) Do these step to install the gage assembly [9].

(a) Install the flange [18] on the gage assembly [9].

(b) Install the gage assembly [9] on the bracket in the right wheel well.

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(c) Apply a thin layer of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternative) to the faces of the washers [13], the faces of the washers [14] and the faces of the spacers [15]. Wipe off excess.

(d) Install the spacers [15], washers [14], washers [13] on the flange [18].

NOTE: The rubber washers [14] should always be against the shield [16].

(e) Install the shield [16] on the spacers [15].

(f) Apply a thin layer ofCor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternative) to the thread reliefs and threads of the screws [11], the faces of the washers [12], the faces of the washers [13], the faces of the washers [14]. Wipe off the excess.

(g) Install the washers [14], the washers [13], washers [12], and screws [11].

NOTE: Install washers [13] until no more than one washer [13] is above the spacer to prevent movement of the shield [16]. Tighten without damage to washers [14].

(h) Connect the gas line [10] to the union [19] on the gage assembly [9].

F. Brake Accumulator Pressure Gage Installation Test

SUBTASK 32-41-51-710-001

(1) In the operation test, for each pressure reading, compare the pressure measured by the brake accumulator pressure gage in the wheel well with the pressure measured by the brake accumulator pressure gage in the flight compartment. Make sure the compared pressure values are approximately the same.

SUBTASK 32-41-51-790-001

(2) Do these steps to do an operational test of the gage assembly [9].

(a) Do this task: Hydraulic Brake Accumulator Servicing, TASK 12-15-11-420-801.

1) Make sure the cap [6] is installed on the charging valve [8] and it has lockwire, G01505, on it, do this task Lockwire, Cotter Pins, and Lockrings - Installation, TASK 20-10-44-400-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Make sure that the gages for normal (System B) hydraulic system and the brake accumulator indicated approximately 3000 psig (20,684 kPa).

(d) Make sure there is no leak at the connection for the line on the gage assembly [9].

(e) Apply a soap solution to the connection at the union [19].

1) Examine the connection for air bubbles.

(f) To bleed the normal (System B) hydraulic system, do this task: Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves, TASK 32-41-00-870-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE ACCUMULATOR PRESSURE TRANSMITTER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the brake accumulator pressure transmitter

(2) An installation of the brake accumulator pressure transmitter.

TASK 32-41-53-000-801

2. Brake Accumulator Pressure Transmitter Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Removal

SUBTASK 32-41-53-480-003

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-53-860-001

(2) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-53-480-002

(3) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-53-860-002

(4) Release the parking brake.

SUBTASK 32-41-53-860-003

(5) Fully push the brake pedals twelve times to remove the hydraulic pressure from the brake accumulator.

SUBTASK 32-41-53-860-006

(6) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	13	C00306	HYDRAULIC SYSTEM BRAKE PRESS IND

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Brake Accumulator Pressure Transmitter Removal

SUBTASK 32-41-53-840-001

(1) Do these steps to remove the gas pressure from the brake accumulator:

(a) Remove the cap [2] from the brake accumulator charging valve [4].

WARNING	DO NOT LOOSEN THE BODY OF THE BRAKE-ACCUMULATOR CHARGING VALVE. THE PRESSURE IN THE BRAKE ACCUMULATOR CAN QUICKLY PUSH THE GAS CHARGING VALVE OFF THE MANIFOLD. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(b) Turn the swivel nut [3] of the brake accumulator charging valve [4] one turn counterclockwise.

NOTE: This will release the gas pressure from the brake accumulator.

(c) Make sure that the brake accumulator pressure gage [5] goes to zero.

SUBTASK 32-41-53-020-001

(2) Do these steps to remove the pressure transmitter [7]:

(a) Disconnect the electrical connector [6] from the pressure transmitter [7].

(b) Remove the pressure transmitter [7] from the manifold [1].

(c) Remove the packing [8] from the pressure transmitter [7] and discard it.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Hydraulic Brake Accumulator Pressure Transmitter Installation
Figure 401/32-41-53-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-53-400-801

3. Brake Accumulator Pressure Transmitter Installation

(Figure 401)

A. References

Reference	Title
12-15-11-420-801	Hydraulic Brake Accumulator Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	

C. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Brake Accumulator Pressure Transmitter Installation

SUBTASK 32-41-53-420-001

(1) Do these steps to install the pressure transmitter [7]:

(a) Lubricate a new packing [8] with hydraulic fluid, D00153.

(b) Install the packing [8] on the pressure transmitter [7].

(c) Install the pressure transmitter [7] in its location on the accumulator manifold [1].

(d) Before you connect the electrical connector [6] to the pressure transmitter [7], examine the connector for corrosion.

> **WARNING**
> DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(e) If there was corrosion, correct the problem (SWPM 20-60-03).

(f) Apply D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

(g) Connect the electrical connector [6] to the pressure transmitter [7].

SUBTASK 32-41-53-610-001

(2) Do this task: Hydraulic Brake Accumulator Servicing, TASK 12-15-11-420-801.

SUBTASK 32-41-53-410-001

(3) Make sure that the cap [2] is installed after you service the accumulator.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Brake Accumulator Pressure Transmitter Installation Test

SUBTASK 32-41-53-860-007

(1) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	13	C00306	HYDRAULIC SYSTEM BRAKE PRESS IND

SUBTASK 32-41-53-860-004

(2) For the B hydraulic system, do this task: do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-53-720-001

(3) Measure the brake accumulator pressure with the direct reading gage.

NOTE: The direct reading gage is in the wheel well for the right main landing gear, next to the pressure transmitter.

SUBTASK 32-41-53-720-002

(4) Measure the brake accumulator pressure with the BRAKE ACCUM PRESS gage.

NOTE: The BRAKE ACCUM PRESS gage is in the flight compartment on the P3 first officer's instrument panel.

SUBTASK 32-41-53-710-001

(5) Make sure that the pressure shown by the BRAKE ACCUM PRESS gage is approximately the same as the pressure shown by the direct reading pressure gage.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-53-860-005

(1) For the B hydraulic system, do this task: do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE ACCUMULATOR PRESSURE GAGE (FLIGHT COMPARTMENT) - REMOVAL/INSTALLATION

1. **General**

A. This procedure has these tasks:

(1) A removal of the brake accumulator pressure gage (flight compartment).

(2) An installation of the brake accumulator pressure gage (flight compartment).

TASK 32-41-54-000-801

2. **Brake Accumulator Pressure Gage (Flight Compartment) Removal**

(Figure 401)

A. Location Zones

Zone	Area
212	Flight Compartment - Right

B. Prepare for the Removal

SUBTASK 32-41-54-860-001

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	13	C00306	HYDRAULIC SYSTEM BRAKE PRESS IND

C. Brake Accumulator Pressure Gage Assembly Removal

SUBTASK 32-41-54-020-001

(1) Loosen the quick release fastener [5] that hold the P3-1 panel [4] to the airplane.

SUBTASK 32-41-54-020-002

(2) Pull the P3-1 panel [4] away from the right forward panel.

SUBTASK 32-41-54-020-003

(3) Disconnect the electrical connector [7] from the brake accumulator pressure gage [3].

SUBTASK 32-41-54-020-004

(4) Loosen the clamp [1] that holds the brake accumulator pressure gage [3]:

NOTE: The clamp has two bolts, the mounting screw [6] holds the clamp [1] to the P3-1 panel [4], the adjusting screw [2] loosens the clamp.

(a) Loosen the adjusting screw [2] that holds the clamp [1] to the brake accumulator pressure gage [3] until the pressure gage can be removed from the P3-1 panel [4].

NOTE: Do not loosen the mounting screw [6] that holds the clamp [1] to the P3-1 panel [4].

SUBTASK 32-41-54-020-005

(5) Remove the brake accumulator pressure gage [3].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G96553 S0006575494_V2

Brake Accumulator Pressure Gage Installation
Figure 401/32-41-54-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-54-400-801

3. Brake Accumulator Pressure Gage (Flight Compartment) Installation

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Consumable Materials

Reference	Description	Specification
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	

C. Location Zones

Zone	Area
212	Flight Compartment - Right

D. Brake Accumulator Pressure Gage Assembly Installation

SUBTASK 32-41-54-420-001

(1) Put the brake accumulator pressure gage [3] in its location in the P3-1 panel [4].

SUBTASK 32-41-54-020-006

(2) Tighten the adjusting screw [2] on the clamp [1] that holds the brake accumulator pressure gage [3]:

(a) Tighten the mounting screw [6] on the clamp [1] until the brake accumulator pressure gage [3] is firmly held to the P3-1 panel [4].

SUBTASK 32-41-54-420-002

(3) Before you connect the electrical connector [7] to the brake accumulator pressure gage [3], examine the connector for corrosion.

> **WARNING**
> DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, refer to (SWPM 20-60-03) to correct the problem.

(b) Apply the D5026NS or ZC-026 compound, G50171 to the connector (SWPM 20-60-03).

(4) Connect the electrical connector [7] to the brake accumulator pressure gage [3].

SUBTASK 32-41-54-420-003

(5) Hold the P3-1 panel [4] on the forward panel.

SUBTASK 32-41-54-420-004

(6) Tighten the quick release fastener [5] which hold the P3-1 panel [4] to the airplane.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-54-860-002

(7) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	13	C00306	HYDRAULIC SYSTEM BRAKE PRESS IND

E. Brake Accumulator Pressure Gage Assembly Installation Test

SUBTASK 32-41-54-480-001

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-41-54-790-001

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) For the B hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-54-710-001

(3) Make sure the brake accumulator pressure gage [3] shows approximately 3000 psig.

SUBTASK 32-41-54-860-003

(4) For the B hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-54-480-002

(5) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-54-860-004

(6) Release the parking brake.

SUBTASK 32-41-54-860-005

(7) Fully push the captain's brake pedals twelve times to remove the pressure from the brake accumulator.

SUBTASK 32-41-54-710-002

(8) Make sure the brake accumulator pressure gage (flight compartment) shows approximately 1000 psig.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE ACCUMULATOR PRESSURE RELIEF VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the brake accumulator pressure relief valve

(2) An installation of the brake accumulator pressure relief valve

B. The relief valve is on the aft wall of the right wheel well.

TASK 32-41-71-000-801

2. Brake Accumulator Pressure Relief Valve Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Removal

SUBTASK 32-41-71-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-71-480-002

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-71-860-001

(3) Release the parking brake.

SUBTASK 32-41-71-860-002

(4) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-71-870-001

(5) Fully push the brake pedals twelve times to remove the hydraulic pressure from the brake accumulator (Figure 401).

D. Brake Accumulator Pressure Relief Valve Removal

SUBTASK 32-41-71-020-001

(1) Do these steps to remove the brake Accumulator Pressure relief valve [1]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Remove the bolts [4] and the washers [3] and the clamp [2] from the airplane.

(b) Disconnect the outboard hydraulic line from the relief valve [1].

(c) Disconnect the inboard hydraulic tee from the relief valve [1].

(d) Install caps or plugs on the hydraulic lines.

(e) Remove the relief valve [1] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake System Relief Valve Installation
Figure 401/32-41-71-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-71-420-801

3. Brake Accumulator Pressure Relief Valve Installation

(Figure 401)

A. References

Reference	Title
12-15-11-420-801	Hydraulic Brake Accumulator Servicing (P/B 301)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Consumable Materials

Reference	Description	Specification
G01505	Lockwire - Safety And Lock	NASM20995

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Valve	29-21-52-01-603	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		29-21-52-05-530	LOM 422-434, 437-447, 450-999

D. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

E. Brake System Relief Valve Installation

SUBTASK 32-41-71-420-001

(1) Do these steps to install the brake accumulator pressure relief valve [1]:

(a) Remove the caps or plugs from the hydraulic lines.

(b) Put the relief valve [1] in its position in the hydraulic line.

(c) Connect the inboard hydraulic tee to the relief valve [1].

(d) Connect the outboard hydraulic line to the relief valve [1].

(e) Put the clamp [2] in its position on the relief valve [1].

(f) Install the bolts [4] and the washers [3] to connect the clamp [2] to the airplane.

SUBTASK 32-41-71-420-002

(2) Do the steps that follow to make sure the brake accumulator is in its usual condition:

(a) Make sure the brake accumulator charge pressure is correct.

NOTE: The brake accumulator charge pressure can be found on the placard located next to the brake accumulator pressure gage.

(b) If the brake accumulator needs to be serviced, do this task: Hydraulic Brake Accumulator Servicing, TASK 12-15-11-420-801.

1) Make sure the cap is installed on the charging valve and it has lockwire, G01505 on it, do this task Lockwire, Cotter Pins, and Lockrings - Installation, TASK 20-10-44-400-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Brake Accumulator Pressure Relief Valve Leakage Test

SUBTASK 32-41-71-870-002

(1) Do the steps that follow to do a leakage check of the brake accumulator pressure relief valve:

> **WARNING** KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Fully push the brake pedals twelve times to bleed the air out through the brake metering valves.

NOTE: Wait approximately 5 seconds between each time that you push the brake pedals.

(c) Make sure there are no leaks from the relief valve [1] when you bleed the brake system.

(d) For the normal (System B) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE HYDRAULIC FUSES - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the hydraulic fuses for the alternate brake system for the main landing gear.

(2) An installation of the hydraulic fuses for the alternate brake system for the main landing gear.

(3) A removal of the hydraulic fuses for the normal brake system for the main landing gear.

(4) An installation of the hydraulic fuses for the normal brake system for the main landing gear.

B. There is one fuse for the left alternate brake hydraulic system and one fuse for the right alternate hydraulic system.

(1) The two fuses are in the wheel well of the main landing gear.

(2) This procedure shows one hydraulic fuse for the alternate brake system.

(3) The example fuse is for the left main landing gear.

(4) This procedure also applies to the other two hydraulic fuses for the alternate brake system.

C. There are two fuses for the left normal brake hydraulic system and two fuses for the right normal hydraulic system.

(1) The four fuses are in the wheel well of the main landing gear.

(2) This procedure shows one hydraulic fuse for the normal brake system.

(3) The example fuse is for the left main landing gear.

(4) This procedure also applies to the other three hydraulic fuses for the normal brake system.

TASK 32-41-72-020-801

2. Brake Hydraulic Fuse (Alternate Brake System) - Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Removal

SUBTASK 32-41-72-480-001

WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear. Do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-72-480-002

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-72-860-001

(3) Release the parking brake.

SUBTASK 32-41-72-860-002

(4) For the A hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-72-870-001

(5) Fully push the brake pedals 12 times to remove the hydraulic pressure from the brake accumulator.

D. Hydraulic Fuse Removal

SUBTASK 32-41-72-020-001

(1) To remove each fuse (alternate brake system) [1] do these steps:

(a) Disconnect each hydraulic line [5] from the fuse (alternate brake system) [1].

(b) Install plugs in each hydraulic line [5] and the fittings of the fuse (alternate brake system) [1].

(c) Remove the bolts [2], the washers [3] and the clamp [4] that holds the fuse (alternate brake system) [1] to the airplane.

(d) Remove the fuse (alternate brake system) [1] from the airplane.

E. Test the Brake Hydraulic Fuses

SUBTASK 32-41-72-720-001

(1) Do the functional test of the brake hydraulic fuses with the suppliers recommended component maintenance test instructions and test equipment.

NOTE: The suppliers instructions give a reverse flow test, internal leakage test, pressure drop test, volumetric capacity test and reset test for the fuses. This is an off-airplane bench test.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

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Brake Hydraulic Fuse (Alternate Brake System) Installation
Figure 401/32-41-72-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A SYSTEM - ALTERNATE BRAKE HYDRAULIC FUSE (EXAMPLE)

B

F62187 S0006575505_V5

Brake Hydraulic Fuse (Alternate Brake System) Installation
Figure 401/32-41-72-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-72-420-801

3. Brake Hydraulic Fuse (Alternate Brake System) - Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-870-803	Alternate (System A) Hydraulic Brake System - Bleeding (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Fuse (alternate brake system)	29-11-52-25-535	LOM 422-434, 437-447, 450-464
		29-11-52-25M-510	LOM 422-434, 437-447, 450-999
		29-11-52-30A-100	LOM 465-999
		32-41-72-01-045	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Hydraulic Fuse Installation

SUBTASK 32-41-72-420-001

(1) To install each fuse (alternate brake system) [1] do these steps:

(a) Hold the fuse (alternate brake system) [1] in its position.

NOTE: Boeing recommends that you put the hydraulic fuse into a position that lets you see the reset lever from the ground.

(b) Make sure that the IN-OUT flow arrow on the fuse (alternate brake system) [1] is in the same direction as the flow arrow decal on the structure.

(c) Install the bolts [2], the washers [3] and the clamp [4] on the fuse (alternate brake system) [1] and the airplane.

(d) Remove the plugs from each hydraulic line [5] and the fittings of the fuse (alternate brake system) [1].

(e) Connect each hydraulic line [5] to the fuse (alternate brake system) [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Hydraulic Fuse Installation Test

SUBTASK 32-41-72-790-001

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(1) For the alternate brake system, pressurize the hydraulic system A. Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-72-790-002

(2) Do a visual check of each fuse (alternate brake system) [1] for hydraulic leaks.

SUBTASK 32-41-72-870-003

(3) To bleed the alternate (System A) hydraulic system, do this task: Alternate (System A) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-803.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-72-860-003

(1) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-72-860-004

(2) Set the parking brakes.

END OF TASK

TASK 32-41-72-000-801

4. Brake Hydraulic Fuse (Normal Brake System) - Removal

(Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Removal

SUBTASK 32-41-72-860-005

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear. Do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-72-860-006

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-72-860-007

(3) Release the parking brake.

SUBTASK 32-41-72-860-008

(4) For the B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-72-870-004

(5) Fully push the brake pedals 12 times to remove the hydraulic pressure from the brake accumulator.

D. Hydraulic Fuse Removal

SUBTASK 32-41-72-020-006

(1) To remove each fuse (normal brake system) [6] do these steps:

(a) Disconnect each hydraulic line [5] from the fuse (normal brake system) [6].

(b) Install plugs in each hydraulic line [5] and the fittings of the fuse (normal brake system) [6].

(c) Remove the bolts [2], the washers [3] and the clamp [4] that holds the fuse (normal brake system) [6] to the airplane.

(d) Remove the fuse (normal brake system) [6] from the airplane.

E. Test the Brake Hydraulic Fuses

SUBTASK 32-41-72-720-002

(1) Do the functional test of the brake hydraulic fuses with the suppliers recommended component maintenance test instructions and test equipment.

NOTE: The suppliers instructions give a reverse flow test, internal leakage test, pressure drop test, volumetric capacity test and reset test for the fuses. This is an off-airplane bench test.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

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Brake Hydraulic Fuse (Normal Brake System) Installation
Figure 402/32-41-72-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B SYSTEM - NORMAL BRAKE HYDRAULIC FUSE (EXAMPLE)

B

J94887 S0000187538_V4

Brake Hydraulic Fuse (Normal Brake System) Installation
Figure 402/32-41-72-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-72-400-801

5. Brake Hydraulic Fuse (Normal Brake System) - Installation

(Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-870-802	Normal (System B) Hydraulic Brake System - Bleeding (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
6	Fuse (normal brake system)	29-21-52-01-609	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		29-21-52-05-565	LOM 422-434, 437-447, 450-999

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Hydraulic Fuse Installation

SUBTASK 32-41-72-420-005

(1) To install each fuse (normal brake system) [6] do these steps:

(a) Hold the fuse (normal brake system) [6] in its position.

NOTE: Boeing recommends that you put the hydraulic fuse into a position that lets you see the reset lever from the ground.

(b) Make sure that the IN-OUT flow arrow on the fuse (normal brake system) [6] is in the same direction as the flow arrow decal on the structure.

(c) Install the bolts [2], the washers [3] and the clamp [4] on the fuse (normal brake system) [6] and the airplane.

(d) Remove the plugs from each hydraulic line [5] and the fittings of the fuse (normal brake system) [6].

(e) Connect each hydraulic line [5] to the fuse (normal brake system) [6].

E. Hydraulic Fuse Installation Test

SUBTASK 32-41-72-790-003

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(1) For the normal brake system, pressurize the hydraulic system B. Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-72-790-004

(2) Do a visual check of each fuse (normal brake system) [6] for hydraulic leaks.

SUBTASK 32-41-72-870-005

(3) To bleed the normal (System B) hydraulic system, do this task: Normal (System B) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-802.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-72-860-009

(1) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-72-860-010

(2) Set the parking brakes.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

HYDRAULIC BRAKE CONTROL CABLE - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these three tasks:

(1) A removal of the hydraulic brake control cables.

(2) An installation of the hydraulic brake control cables.

(3) A visual inspection of the brake control system.

TASK 32-41-81-000-801

2. Hydraulic Brake Control Cable Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
20-10-10-000-801	Turnbuckle Locking Clips Removal (P/B 401)
25-22-00-000-801	Passenger Seat - Removal (P/B 401)
25-27-15-000-801	Carpet Removal (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-21-00-000-801	Passenger Cabin Floor Panel - Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1569	Clamp - Control Cable Part #: A20005-9 Supplier: 81205
STD-837	String

C. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

E. Access Panels

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Prepare for the Removal

SUBTASK 32-41-81-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-81-480-002

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-81-860-001

(3) Release the parking brake.

SUBTASK 32-41-81-840-001

(4) To get access to the aft cable [2], forward cable [4], turnbuckles [3] and quadrant [5] (forward of nose wheel well), do this step:

(a) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-41-81-840-002

(5) Remove the passenger seats from station 706 through station 727, do this task: Passenger Seat - Removal, TASK 25-22-00-000-801.

NOTE: Do this step to get access to the control quadrant assemblies of the brake metering valves.

SUBTASK 32-41-81-840-003

(6) Do this task: Carpet Removal, TASK 25-27-15-000-801.

SUBTASK 32-41-81-840-004

(7) Remove the center floor panels to get access to the control quadrant assemblies of the brake metering valve, do this task: Passenger Cabin Floor Panel - Removal, TASK 53-21-00-000-801.

G. Hydraulic Brake Control Cable Removal

NOTE: The steps that follow are applicable for all of the brake control cables.

SUBTASK 32-41-81-020-001

(1) In the forward compartment, forward of the nose wheel well, do these steps:

(a) Install a control cable clamp, SPL-1569, on the cable (aft cable [2] or forward cable [4]) opposite the one you will remove to keep light tension on the cable (aft cable [2] or forward cable [4]).

NOTE: Light tension on the aft cable or forward cable will prevent wind off on the cable drums. Light tension will also make sure that the cables do not move out of the quadrant guides.

(b) Remove the locking clip [1] from the turnbuckle [3] on the aft cable [2], forward cable [4] (TASK 20-10-10-000-801).

(c) Loosen the turnbuckle [3] for the aft cable [2], forward cable [4] to release the tension in the cable.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that you keep light tension on the aft cable [2] or forward cable [4] to keep the aft cable [2] or forward cable [4] in the quadrant [5] or quadrant [8] guides.

(d) Disconnect the forward cable [4] from the quadrant [5]:

1) Remove the pin [7], that holds the end of the forward cable [4], from the quadrant [5].

2) Pull the fitting on the end of the control forward cable [4] from the control quadrant [5].

3) Remove the forward cable [4] from the quadrant [5].

SUBTASK 32-41-81-020-002

(2) In the passenger compartment, do these steps:

(a) Disconnect the brake control aft cable [2] from the quadrant [8]:

1) Remove the pin [9], that holds the end of the aft cable [2], from the quadrant [8].

2) Pull the fitting on the end of the control aft cable [2] from the control quadrant [8].

SUBTASK 32-41-81-020-003

(3) Attach the new aft cable [2] or forward cable [4], or a piece of string, STD-837, to the old aft cable [2].

NOTE: The new aft cable or forward cable must be pulled through the system to make the new aft cable or forward cable installation easy. If you remove the old aft cable or forward cable without attaching anything to it, installation of the new aft cable or forward cable will be very difficult.

SUBTASK 32-41-81-020-004

(4) Remove the aft cable [2] or forward cable [4]:

(a) Pull the old aft cable [2] or forward cable [4] out, that will pull the new aft cable [2] or forward cable [4], or string, STD-837, through the cable system at the same time.

1) Make sure that the new aft cable [2] or forward cable [4] has grease, D00633, applied to it before it is installed.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Hydraulic Brake Control Cable Installation
Figure 401/32-41-81-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RIGHT CABLE INSTALLATION
(LEFT CABLE INSTALLATION IS EQUIVALENT)

B

LGB1A, LGB1B, LGB2A, LGB2B

G17813 S0006575511_V3

Hydraulic Brake Control Cable Installation
Figure 401/32-41-81-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RIGHT BUS INSTALLATION
(LEFT BUS INSTALLATION IS EQUIVALENT)

C

G19422 S0006575512_V2

Hydraulic Brake Control Cable Installation
Figure 401/32-41-81-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G19564 S0006575513_V2

Hydraulic Brake Control Cable Installation
Figure 401/32-41-81-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G17909 S0006575514_V2

Hydraulic Brake Control Cable Installation
Figure 401/32-41-81-990-801 (Sheet 5 of 5)

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TASK 32-41-81-400-801

3. Hydraulic Brake Control Cable Installation

(Figure 401)

A. References

Reference	Title
20-10-10-400-801	Turnbuckle Lock Installation (P/B 401)
20-10-91-400-801	Control Cables Installation (P/B 401)
20-20-31-200-801	Control Cable Wire Rope - Inspection (P/B 601)
25-22-00-400-802	Passenger Seat - Installation (P/B 401)
25-27-15-400-801	Carpet - Installation (P/B 401)
32-41-00-710-801	Normal and Alternate Brake Application - Functional Test (P/B 501)
32-41-00-820-801	Hydraulic Brake System - Adjustment (P/B 501)
53-21-00-400-801	Passenger Cabin Floor Panel - Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1553	Tensiometer - Cable, Low Tension (200 lbs and below) Part #: 102-03108 Supplier: 21844 Part #: 102-03120 Supplier: 21844 Part #: ACM-200 Supplier: 13331 Part #: ACX-250-1 Supplier: 13331 Part #: T60-1001-C8-1A Supplier: 0N8U4
STD-837	String

C. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Aft cable	32-41-81-01-035	LOM ALL
		32-41-81-01-040	LOM ALL
7	Pin	32-41-21-01-030	LOM ALL
		32-41-21-02-030	LOM ALL
9	Pin	32-41-81-01-005	LOM ALL

E. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

F. Access Panels

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Hydraulic Brake Control Cable Installation

SUBTASK 32-41-81-020-005

(1) Apply grease, D00633, to the new aft cable [2] or forward cable [4] before it is installed.

SUBTASK 32-41-81-420-001

(2) If the new aft cable [2] or forward cable [4] was not pulled through the cable system with the old aft cable [2] or forward cable [4], do these steps:

(a) Attach the new aft cable [2] or forward cable [4] to the string, STD-837, that was pulled through the cable system.

(b) Pull the string, STD-837, out, that will pull the new aft cable [2] or forward cable [4] through the cable system.

(c) Make sure that you keep light tension on the aft cable or forward cable to keep the aft cable or forward cable in the quadrant guides.

(d) The cable type of material and construction are BMS 7-265, Type I, Composition A (TZ), TIN over ZINC coated.

(e) The applicable cable size can be found in the table below:

Table 401/32-41-81-993-806 BRAKE CONTROL CABLE LENGTHS

CABLE REFER-ENCE FORWARD AND AFT	LENGTH INCHES/MM FWD CABLES	LENGTH INCHES/MM AFT CABLES	CABLE SIZES	FITTING ON THE ENDS OF THE CABLE		
				FWD CABLE 1	AFT CABLE 1	FWD & AFT 2
LGB1A 737-800	13.0 in. (330.2 mm)	722.8 in. (18,359.1 mm)	1/8 x 7x19	MS21260L4RH	MS21260L4LH	BACT14A4
LGB1B 737-800	13.0 in. (330.2 mm)	721.9 in. (18,336.3 mm)	1/8 x 7x19	MS21260L4RH	MS21260L4LH	BACT14A4
LGB2A 737-800	13.0 in. (330.2 mm)	722.8 in. (18,359.1 mm)	1/8 x 7x19	MS21260L4RH	MS21260L4LH	BACT14A4
LGB2B 737-800	13.0 in. (330.2 mm)	721.9 in. (18,336.3 mm)	1/8 x 7x19	MS21260L4RH	MS21260L4LH	BACT14A4

SUBTASK 32-41-81-020-006

(3) In the passenger compartment, do these steps:

(a) Connect the brake control aft cable [2] to the quadrant [8] (TASK 20-10-91-400-801).

1) Put the aft cable [2] in its position in the control quadrant [8].

2) Install the new pin [9] to hold the end of the control cable in the quadrant [8].

SUBTASK 32-41-81-020-007

(4) In the forward compartment, forward of the nose wheel well, do these steps:

(a) Connect the forward brake control forward cable [4] to the quadrant [5] (TASK 20-10-91-400-801).

1) Put the forward cable [4] in its position in the control quadrant [5].

2) Install the new pin [7] to hold the end of the control cable in the quadrant [5].

(b) Install the turnbuckle [3].

1) Connect the forward cable [4] to the aft cable [2].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-81-420-003

(5) Adjust the brake cable tension with the low tension cable tensiometer, COM-1553, to 200 ±10 lbf (890 ±45 N) tension.

SUBTASK 32-41-81-200-001

(6) Do this task: Control Cable Wire Rope - Inspection, TASK 20-20-31-200-801.

SUBTASK 32-41-81-420-004

(7) Operate the aft cable [2] or forward cable [4] through full travel 25 times.

SUBTASK 32-41-81-420-005

(8) Do this task: Hydraulic Brake System - Adjustment, TASK 32-41-00-820-801.

SUBTASK 32-41-81-420-006

(9) Make sure that a locking clip [1] is installed on the turnbuckle [3] when you have adjusted the control aft cable [2] and forward cable [4], do this task: Turnbuckle Lock Installation, TASK 20-10-10-400-801.

SUBTASK 32-41-81-420-007

(10) Do this task: Normal and Alternate Brake Application - Functional Test, TASK 32-41-00-710-801.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-81-840-005

(1) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-41-81-840-007

(2) Install the floor panels, do this task: Passenger Cabin Floor Panel - Installation, TASK 53-21-00-400-801.

SUBTASK 32-41-81-840-008

(3) Do this task: Carpet - Installation, TASK 25-27-15-400-801.

SUBTASK 32-41-81-840-009

(4) Do this task: Passenger Seat - Installation, TASK 25-22-00-400-802.

SUBTASK 32-41-81-840-010

(5) Set the parking brakes.

END OF TASK

TASK 32-41-81-000-802

4. Brake Control System Visual Inspection

(Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Procedure

SUBTASK 32-41-81-480-003

(1) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

E. Forward Brake Control Mechanism Inspection

SUBTASK 32-41-81-840-020

(1) To get access to the pilots and copilots brake/rudder pedals and visible brake control components (forward of nose wheel well), do this step:

(a) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-41-81-210-002

(2) Do a detail visual inspection of the brake cable quadrants, bell cranks, control rods.

F. Aft Brake Control Mechanisms Inspection

SUBTASK 32-41-81-840-021

(1) Go to the main landing gear wheel well.

SUBTASK 32-41-81-210-003

(2) Do a detail visual inspection of the visible part of the brake control mechanism to the brake metering valve.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-81-840-015

(1) Close this access panel:

Number	Name/Location
112A	Forward Access Door

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Control System Visual Inspection
Figure 402/32-41-81-990-802 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RIGHT CABLE INSTALLATION
(LEFT CABLE INSTALLATION IS EQUIVALENT)

B

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Brake Control System Visual Inspection
Figure 402/32-41-81-990-802 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RIGHT BRAKE PEDAL BUS
(LEFT BRAKE PEDAL BUS IS EQUIVALENT)

C

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Brake Control System Visual Inspection
Figure 402/32-41-81-990-802 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(RIGHT SIDE)

2004347 S0000393519_V2

Brake Control System Visual Inspection
Figure 402/32-41-81-990-802 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE ACCUMULATOR ISOLATION VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the accumulator isolation valve assembly [13].

(2) An installation of the accumulator isolation valve

(3) An operational test of the accumulator isolation valve.

TASK 32-41-91-000-801

2. Accumulator Isolation Valve Removal

(Figure 401)

A. References

Reference	Title
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-41-91-480-001

> **WARNING**
> MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-91-480-002

(2) Put chocks around the tires of all the landing gear.

SUBTASK 32-41-91-860-001

(3) Release the parking brake.

SUBTASK 32-41-91-860-002

(4) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-91-870-001

(5) Bleed the pressure from the brake accumulator:

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(a) Operate the brake pedals for approximately 12 times or until the gage on the brake accumulator shows no change in the pressure.

NOTE: This step will make sure the pressure is fully released from the brake accumulator.

D. Brake Accumulator Isolation Valve Removal

SUBTASK 32-41-91-020-001

(1) Do these steps to remove the accumulator isolation valve assembly [13]:

(a) Disconnect the hydraulic line [1] and hydraulic line [8], and the elbow [11] from the accumulator isolation valve assembly [13].

(b) Install plugs in the hydraulic line [1], hydraulic line [8], and elbow [11].

(c) Install caps on the reducer [2], reducer [7], and reducer [10] in the ports of the accumulator isolation valve assembly [13].

(d) Remove the bolts [4], and the washers [5] that attach the accumulator isolation valve assembly [13] to the mating surface.

(e) Remove the accumulator isolation valve assembly [13] from the airplane.

SUBTASK 32-41-91-020-002

(2) If the replacement accumulator isolation valve assembly [13] does not have hydraulic fittings installed, do these steps:

(a) Remove the reducer [2], reducer [7], and reducer [10] from the ports of the accumulator isolation valve assembly [13].

(b) Remove and discard the packing [3], packing [6], and packing [9].

(c) Install plugs in the hydraulic ports of the accumulator isolation valve assembly [13].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Accumulator Isolation Valve Installation
Figure 401/32-41-91-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F50134 S0006575526_V2

Accumulator Isolation Valve Installation
Figure 401/32-41-91-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-91-420-801

3. Accumulator Isolation Valve Installation

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Consumable Materials

Reference	Description	Specification
B00083	Solvent - VM&P Naphthas	TT-N-95 Type II, ASTM D-3735 Type III
D00054	Fluid - Hydraulic Assembly Lubricant - MCS 352B (Formerly Monsanto MCS 352B)	
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Packing	32-41-91-01-055	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-91-03-035	LOM 422-434, 437-447, 450-999
6	Packing	32-41-91-01-050	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-91-03-030	LOM 422-434, 437-447, 450-999
9	Packing	32-41-91-01-050	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-91-03-030	LOM 422-434, 437-447, 450-999
13	Valve assembly	32-41-91-01-065	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-41-91-03-045	LOM 422-434, 437-447, 450-999
		32-41-91-03-165	LOM 422-434, 437-447, 450-999
		32-41-93-01-050	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Zone	Area
740	Subzone - Right Main Landing Gear and Landing Gear Doors

E. Prepare for the Installation

SUBTASK 32-41-91-110-001

(1) Prepare the mating surfaces for installation of the accumulator isolation (Figure 401).

(a) Clean the mating surface of the accumulator isolation valve assembly [13] with the solvent, B00083.

(b) Clean the mating surface for the accumulator isolation valve assembly [13] with the solvent, B00083.

F. Brake Accumulator Isolation Valve Installation

SUBTASK 32-41-91-640-001

(1) If the reducer [2], reducer [7], and reducer [10] and the packing [3], packing [6], and packing [9] are not installed, do these steps:

(a) Lubricate the reducer [2], reducer [7], and reducer [10], and the new packing [3], packing [6], packing [9] with hydraulic fluid, D00153 or MCS 352B fluid, D00054.

(b) Install the reducer [2], reducer [7], and reducer [10], and the new packing [3], packing [6], and packing [9] in their location on the accumulator isolation valve assembly [13].

SUBTASK 32-41-91-420-001

(2) Do these steps to install the accumulator isolation valve assembly [13]:

(a) Put the accumulator isolation valve assembly [13] on the mating surface.

(b) Install the bolts [4], and the washers [5] to attach the accumulator isolation valve assembly [13] on the mating surface.

(c) Remove the caps from the hydraulic ports of the accumulator isolation valve assembly [13].

(d) Remove the plugs from the hydraulic line [1], hydraulic line [8], and elbow [11].

(e) Connect the hydraulic line [1], hydraulic line [8], and elbow [11] to the accumulator isolation valve assembly [13].

G. Accumulator Isolation Valve Test

SUBTASK 32-41-91-870-003

(1) Do the steps that follow to make sure the valve assembly does not leak:

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) For the normal and alternate brake hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Make sure the PRESS A, PRESS B, and BRAKE hydraulic connections on the valve assembly [13] do not leak.

SUBTASK 32-41-91-870-002

(2) Bleed the brake hydraulic system:

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(a) Operate the brake pedals 6 times.

NOTE: Operate the pedals slowly and wait a minimum of 5 seconds between each time you push the pedals.

SUBTASK 32-41-91-860-003

(3) For the normal and alternate hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-91-840-002

(4) Set the parking brakes.

SUBTASK 32-41-91-840-003

(5) Remove the chocks from around the tires of all the landing gear.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ALTERNATE BRAKE SELECTOR VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the alternate brake selector valve (referred to as the valve assembly [1])

(2) An installation of the alternate brake selector valve

(3) An operational test of the alternate brake selector valve

(4) An operational test of the landing gear retract braking.

TASK 32-41-93-000-801

2. Alternate Brake Selector Valve Removal

(Figure 401)

A. References

Reference	Title
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-41-93-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-93-860-002

(2) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-93-870-001

(3) Bleed the pressure from the brake accumulator:

(a) Operate the brake pedals for approximately 12 times or until the gage on the brake accumulator shows no change in the pressure.

NOTE: This step will make sure that the pressure is fully released from the brake accumulator.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Alternate Brake Selector Valve Removal

SUBTASK 32-41-93-020-001

(1) Do these steps to remove the alternate brake selector valve assembly [1]:

(a) Disconnect the electrical connector [3] from the pressure switch [2] on the alternate brake selector valve assembly [1].

(b) Disconnect the hydraulic line [6] from the normal port on the alternate brake selector valve assembly [1].

(c) Disconnect the T-fitting [7] from the return port on the alternate brake selector valve assembly [1].

(d) Disconnect the T-fitting [10] from the brake port on the alternate brake selector valve assembly [1].

(e) Disconnect the elbow [13] from the alt pressure port on the alternate brake selector valve assembly [1].

(f) Install caps on the hydraulic line [6], T-fitting [7], T-fitting [10], and the elbow [13].

(g) Install plugs in the hydraulic ports of the alternate brake selector valve assembly [1].

(h) Remove the nuts [16] and washers [17] that attach the alternate brake selector valve assembly [1] to the mating surface.

(i) Remove the alternate brake selector valve assembly [1] from the airplane.

SUBTASK 32-41-93-020-002

(2) If you will install a new alternate brake selector valve assembly [1] without the unions or reducers, do these steps:

(a) Remove the union [8], reducer [5], reducer [11], and reducer [14] from the alternate brake selector valve assembly [1].

(b) Remove and discard the packing [4], packing [9], packing [12], and packing [15].

SUBTASK 32-41-93-020-003

(3) Do the steps that follow to remove the pressure switch from the alternate brake selector valve assembly [1]:

(a) Remove the pressure switch [2] from the alternate brake selector valve assembly [1].

(b) Remove and discard the packing from the pressure switch [2].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Alternate Brake Selector Valve Installation
Figure 401/32-41-93-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

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Alternate Brake Selector Valve Installation
Figure 401/32-41-93-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-93-420-801

3. Alternate Brake Selector Valve Installation

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Consumable Materials

Reference	Description	Specification
B00083	Solvent - VM&P Naphthas	TT-N-95 Type II, ASTM D-3735 Type III
D00054	Fluid - Hydraulic Assembly Lubricant - MCS 352B (Formerly Monsanto MCS 352B)	
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

D. Prepare for the Installation

SUBTASK 32-41-93-110-001

(1) Prepare the mating surfaces for installation of the alternate brake selector valve assembly [1], do this step:

(a) Clean the mating surface of the alternate brake selector valve assembly [1] with solvent, B00083.

E. Alternate Brake Selector Valve Installation

SUBTASK 32-41-93-640-001

(1) If the union, reducers, and packings are not installed, do these steps:

(a) Lubricate the union [8], reducer [5], reducer [11], reducer [14], and new packing [4], packing [9], packing [12], packing [15] with hydraulic fluid, D00153, or MCS 352B fluid, D00054.

(b) Install the union [8], reducer [5], reducer [11], reducer [14], and new packing [4], packing [9], packing [12], packing [15] in their location on the alternate brake selector valve assembly [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-93-420-001

(2) If the pressure switch is not installed in the alternate brake selector valve assembly [1], do these steps:

(a) Install the packing on the pressure switch [2].

(b) Install the pressure switch [2] on the alternate brake selector valve assembly [1].

SUBTASK 32-41-93-080-001

(3) Install the alternate brake selector valve assembly [1], do these steps:

(a) Position the alternate brake selector valve assembly [1] on the mating surface.

(b) Install the washers [17] and nuts [16] to attach the alternate brake selector valve assembly [1] on the mating surface.

(c) Remove the plugs from the hydraulic ports of the alternate brake selector valve assembly [1].

(d) Remove the caps from the hydraulic line [6], T-fitting [7], T-fitting [10], and elbow [13].

(e) Connect the hydraulic line [6] to the normal port on the alternate brake selector valve assembly [1].

(f) Connect the T-fitting [7] to the return port on the alternate brake selector valve assembly [1].

(g) Connect the T-fitting [10] to the brake port on the alternate brake selector valve assembly [1].

(h) Connect the elbow [13] to the alt pressure port on the alternate brake selector valve assembly [1].

(i) Before you connect the electrical connector [3] to the pressure switch [2] on the alternate brake selector valve assembly [1], examine the connector for corrosion.

WARNING

DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(j) If there was corrosion, refer to SWPM 20-60-03 to correct the problem.

(k) Apply the D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

(l) Connect the electrical connector [3] to the pressure switch [2] on the alternate brake selector valve assembly [1].

SUBTASK 32-41-93-790-001

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) For the A and B hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-93-870-002

(5) Bleed the brake hydraulic system.

(a) Operate the brake pedals 6 times.

NOTE: Operate the pedals slowly and wait a minimum of 5 seconds between each operation.

SUBTASK 32-41-93-710-005

(6) Do this task: Alternate Brake Selector Valve Test, TASK 32-41-93-700-801.

SUBTASK 32-41-93-710-006

(7) Do this task: Gear Retract Braking - Operational Test, TASK 32-41-93-710-801.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-93-860-016

(1) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

TASK 32-41-93-700-801

4. Alternate Brake Selector Valve Test

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors
730	Subzone - Left Main Landing Gear and Landing Gear Doors
740	Subzone - Right Main Landing Gear and Landing Gear Doors

C. Prepare for the Test

SUBTASK 32-41-93-480-004

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-93-790-002

WARNING	KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) Make sure that the A and B hydraulic systems are pressurized. If they are not pressurized, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

D. Alternate Brake Selector Valve Operation Test (Hydraulic System B)

SUBTASK 32-41-93-720-001

(1) Push the brake pedals 5 times to apply and release the brakes.

NOTE: Wait approximately 3 seconds each time the brakes are applied.

SUBTASK 32-41-93-720-002

(2) Make sure that the brake pistons move to show that the brakes operate correctly.

E. Alternate Brake Selector Valve Operation Test (Hydraulic System A)

SUBTASK 32-41-93-860-003

(1) For hydraulic system B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-93-210-001

(2) Make sure that the BRAKE PRESS indicator gage, on the P3-1 panel, shows 3000 +/-100 psi and stays constant during the brake operation when you do the steps that follow.

SUBTASK 32-41-93-720-003

(3) Push the brake pedals 5 times to apply and release the brakes.

SUBTASK 32-41-93-720-004

(4) Make sure that the brake pistons move to show that the brakes operate correctly.

SUBTASK 32-41-93-710-001

(5) Do this test of the ANTISKID INOP light:

(a) Remove the connector from one of the alternate antiskid valves.

(b) Make sure that the ANTISKID INOP light, on the P2 panel, comes on.

(c) Attach the connector to the alternate antiskid valve.

SUBTASK 32-41-93-860-004

(6) After five to ten minutes, do a check for leaks around the alternate brake selector valve assembly [1].

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-93-860-014

(1) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-93-710-801

5. Gear Retract Braking - Operational Test

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1819	Gauge Set - Hydraulic Brake System, Pressure Checking Opt Part #: F72977-45 Supplier: 81205 Opt Part #: F72977-46 Supplier: 81205 Opt Part #: F72977-47 Supplier: 81205 Opt Part #: F72977-62 Supplier: 81205
SPL-10813	Gauge Set, Pressure Check - Hydraulic Brake System Part #: C32051-1 Supplier: 81205 Opt Part #: F72977-45 Supplier: 81205 Opt Part #: F72977-46 Supplier: 81205 Opt Part #: F72977-47 Supplier: 81205 Opt Part #: F72977-62 Supplier: 81205
SPL-15031	Test Equipment - Brake Bleed Part #: G32075-16 Supplier: 81205

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Operational Test

SUBTASK 32-41-93-480-010

WARNING OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Gear Retract Braking Operational Test

SUBTASK 32-41-93-480-011

(1) Install the pressure gauge, SPL-15031, or the optional gauge set, SPL-10813, or gauge set, SPL-1819, on each brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-93-790-003

> **WARNING**
> KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(2) For the A and B hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-41-93-860-007

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR BEFORE YOU MOVE THE CONTROL LEVER. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) Put the landing gear control lever in the UP position.

SUBTASK 32-41-93-870-003

(4) Wait 2 seconds.

SUBTASK 32-41-93-710-002

(5) Make sure that the hydraulic pressure at all brakes is 500 psig (3447 kPa) - 575 psig (3964 kPa).

SUBTASK 32-41-93-710-003

(6) Put the landing gear control lever in the DOWN position.

SUBTASK 32-41-93-710-004

(7) Make sure that the hydraulic pressure at all of the brakes is less than 60 psig (414 kPa).

SUBTASK 32-41-93-480-012

(8) Remove the pressure gage from on each brake.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-93-860-012

(1) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE SHUTTLE VALVES - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the brake shuttle valves

(2) An installation of the brake shuttle valves.

B. There are four brake shuttle valves, two on the right and the two on the left, on the sides of the main gear wheel well. The procedure that follows gives the removal and installation for each of the brake shuttle valves.

C. In this procedure the brake shuttle valve is referred to as the valve assembly [5].

TASK 32-41-95-000-801

2. Brake Shuttle Valve Removal

(Figure 401)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Removal

SUBTASK 32-41-95-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-95-860-001

(2) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-95-480-002

(3) Make sure that the tires have chocks installed around them (TASK 10-11-05-500-801 or TASK 10-11-05-500-802).

SUBTASK 32-41-95-860-002

(4) Release the parking brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-41-95-840-001

(5) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: You will have to operate the brake pedals approximately 12 times to fully release the pressure from the accumulator.

D. Brake Shuttle Valve Removal

SUBTASK 32-41-95-020-001

(1) Do the steps that follow to remove the valve assembly [5]:

(a) Disconnect the hydraulic tubes from the valve assembly [5].

(b) Install caps or plugs on the hydraulic tubes.

(c) Remove the bolts [3] or bolts [7] and washers [4].

(d) Remove the valve assembly [5] from the airplane.

SUBTASK 32-41-95-020-002

(2) If the valve assembly [5] you install does not have the unions [1] installed, do these steps:

(a) Remove the applicable unions [1] from the old valve assembly [5].

(b) Remove the packings [2] from the unions [1] and discard them.

SUBTASK 32-41-95-480-003

(3) Install caps or plugs on the ports of the valve assembly [5].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

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Brake Shuttle Valves Installation
Figure 401/32-41-95-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AFT BRAKE SHUTTLE VALVE

B

FORWARD BRAKE SHUTTLE VALVE

C

F60275 S0006575540_V3

Brake Shuttle Valves Installation
Figure 401/32-41-95-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-95-400-801

3. Brake Shuttle Valve Installation

(Figure 401)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-870-802	Normal (System B) Hydraulic Brake System - Bleeding (P/B 201)
32-41-00-870-803	Alternate (System A) Hydraulic Brake System - Bleeding (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00054	Fluid - Hydraulic Assembly Lubricant - MCS 352B (Formerly Monsanto MCS 352B)	
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Brake Shuttle Valve Installation

SUBTASK 32-41-95-020-003

(1) Remove the caps or plugs from the ports of the valve assembly [5].

SUBTASK 32-41-95-410-001

(2) If the unions [1] are not installed in the valve assembly [5], do these steps:

(a) Install the new packings [2] on the unions [1].

1) Lubricate the packings [2] and the unions [1] with hydraulic fluid, D00153, or MCS 352B fluid, D00054.

(b) Install the unions [1] in the ports of the valve assembly [5].

1) Tighten the unions [1] to 162 in-lb (18.3 N·m) - 178 in-lb (20.1 N·m).

SUBTASK 32-41-95-420-001

CAUTION MAKE SURE THAT YOU POINT AND CONNECT THE BRAKE SHUTTLE VALVE CORRECTLY. THE INCORRECT CONNECTION OF THE VALVE CAN CAUSE DAMAGE TO THE EQUIPMENT AND BRAKE SYSTEM MALFUNCTION.

(3) Do the steps that follow to install the valve assembly [5]:

(a) Make sure that the valve assembly [5] and the mounting bracket are clean.

(b) Hold the valve assembly [5] on the mounting bracket.

1) Make sure that the valve assembly [5] has correct orientation on the mounting bracket (View B and View C, Figure 401).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Install the bolts [3] or bolts [7] and washers [4].

(d) Remove the caps or plugs from the applicable hydraulic tubes.

(e) Connect the hydraulic tubes to the valve assembly [5].

1) Make sure that the tubes are connected to the appropriate ports of the valve assembly [5] (View B and View C, Figure 401).

2) Tighten the B-nuts to 270 ±14 in-lb (31 ±2 N·m).

SUBTASK 32-41-95-790-001

(4) Bleed the hydraulic brake systems, these are the tasks:

Normal (System B) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-802,

Alternate (System A) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-803.

(a) Make sure that there is no leakage from the valve assembly [5] as you bleed the brake hydraulic system.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-95-860-005

(1) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-95-860-004

(2) Set the parking brake.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE FLOW LIMITERS - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the brake flow limiters.

(2) Installation of the brake flow limiters.

B. There are four brake flow limiters, one for each main landing gear brake. The procedure that follows gives the removal and installation for each of the brake flow limiters.

TASK 32-41-96-000-801

2. Brake Flow Limiter Removal

Figure 401

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
551	Left Wing - Rear Spar To Landing Gear Support Beam
651	Right Wing - Rear Spar to Landing Gear Support Beam

C. Prepare for Removal

SUBTASK 32-41-96-480-004

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-41-96-860-001

(2) For the A and B hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802 or Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-41-96-480-002

(3) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-41-96-860-002

(4) Release the parking brake.

SUBTASK 32-41-96-840-001

(5) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: You will have to operate the brake pedals approximately 12 times to fully release the pressure from the brake accumulator.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Brake Flow Limiter Removal

SUBTASK 32-41-96-020-001

(1) Do the steps that follow to remove the flow limiters [1].

(a) Loosen the coupling nut and disconnect the hydraulic line from the flow limiters [1].

(b) Loosen the coupling nut and disconnect the high pressure flexible hoses [2] from the outboard end of the flow limiters [1].

(c) Install caps or plugs on the hydraulic lines.

(d) Loosen and remove the nut and washers from the flow limiters [1].

(e) Remove the flow limiters [1] from the bulkhead.

SUBTASK 32-41-96-480-003

(2) Install caps or plugs on the ports of the flow limiters [1].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

REAR SPAR TO LANDING GEAR SUPPORT BEAM
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

A

1570783 S0000290817_V2

Brake Flow Limiter Installation
Figure 401/32-41-96-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 MAKE SURE THAT THE HOSES ARE CONNECTED TO THE CORRECT BRAKE POSITIONS (THEY ARE NOT CROSSED).

1570996 S0000290818_V3

Brake Flow Limiter Installation
Figure 401/32-41-96-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-41-96-400-801

3. Brake Flow Limiter Installation

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-870-802	Normal (System B) Hydraulic Brake System - Bleeding (P/B 201)
32-41-00-870-803	Alternate (System A) Hydraulic Brake System - Bleeding (P/B 201)
32-42-00-720-803	Antiskid Valve Operational Test (P/B 501)

B. Location Zones

Zone	Area
551	Left Wing - Rear Spar To Landing Gear Support Beam
651	Right Wing - Rear Spar to Landing Gear Support Beam

C. Brake Flow Limiter Installation

SUBTASK 32-41-96-020-002

(1) Remove the caps or plugs from the ports of the flow limiters [1].

SUBTASK 32-41-96-030-001

(2) Remove the caps or plugs from the ends of the hydraulic tubes.

SUBTASK 32-41-96-420-001

(3) Do these steps to install the flow limiters [1]:

(a) Make sure that the flow limiters [1] and bulkhead are clean.

(b) Install a washer on the end of the flow limiters [1] that will fit into the opening in the bulkhead.

(c) Install the flow limiters [1] in the bulkhead.

(d) Install one washer and nut on the flow limiters [1] on the opposite side of the bulkhead and tighten the nut.

(e) Install and connect the hydraulic line to the inboard end of the flow limiters [1].

(f) Install and connect the high pressure flexible hoses [2] to the outboard end of the flow limiters [1].

1) Make sure that the hoses are connected to the correct brake positions and not cross-connected.

SUBTASK 32-41-96-790-002

(4) Do the leak check of the flow limiters [1].

(a) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Push the brake pedals to the limit 10 or more times.

(c) After five minutes, make sure that there is no leakage from the ends of the flow limiters [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Do these tasks: Normal (System B) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-802 and Alternate (System A) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-803.

(e) Do this task: Antiskid Valve Operational Test, TASK 32-42-00-720-803.

D. Put the Airplane Back to Its Usual Condition

SUBTASK 32-41-96-860-003

(1) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-41-96-860-004

(2) Make sure that the chocks installed around tires (PAGEBLOCK 10-11-05/201).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) An Antiskid/Autobrake Control Unit Operational Test

(2) A Normal and Alternate Antiskid Valve Functional Test

(3) An Antiskid Transducer Functional Test

(4) A Normal and Alternate Antiskid Valve Operational Test

(5) An Autobrake Pressure Control Module Functional Test

(6) An Autobrake Shuttle Valve Operational Test

TASK 32-42-00-720-801

2. Antiskid/Autobrake Control Unit Operational Test

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Prepare for the Test

SUBTASK 32-42-00-480-001

WARNING OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-00-480-002

(2) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-00-860-002

(3) Release the parking brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-00-790-001

WARNING	KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(4) For the A and B hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-860-003

(5) Make sure that the two thrust levers are in the IDLE position.

SUBTASK 32-42-00-860-004

(6) Make sure that the landing gear control lever is in the DN position.

SUBTASK 32-42-00-860-005

(7) Make sure that the spoilers are stowed.

SUBTASK 32-42-00-860-006

(8) Make sure that the right and left Air Data Inertial Reference System (ADIRS)s are in the NAV mode.

(a) Align the ADIRS (TASK 34-21-00-820-802 or TASK 34-21-00-820-801).

SUBTASK 32-42-00-010-001

(9) To get access to the Antiskid/Autobrake Control Unit (AACU) on the E1-3 shelf, do this step:

(a) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-42-00-860-007

(10) Make sure that the BRAKE TEST selector switch on the AACU is in the NORM position.

E. Antiskid/Autobrake Control Unit Operational Test

SUBTASK 32-42-00-860-008

(1) Do the following steps for AACU:

(a) Push and then release the RESET switch on the AACU.

(b) Make sure that the display on the front panel of the AACU shows MEM CLR and then clears.

(c) Set the AUTOBRAKE selector switch on the P2-2 panel to "OFF" then to position "1".

NOTE: If the AUTOBRAKE DISARM light is on when you do three subsequent steps, the test will not successfully complete and one or more faults will show on the front panel of the AACU.

(d) Push and hold the ENABLE/VERIFY switch on the AACU.

(e) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the AACU.

(f) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The AACU display will flash WAIT during the test.

(g) Make sure that you see the following indications:

1) Make sure that the AACU display shows TEST END after 10 - 20 seconds.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH AACU P/N 142-147 OR 42-935-X

2) Make sure that the ANTISKID INOP light on the P2-2 panel flashes two times.

LOM ALL; AIRPLANES WITH AACU P/N 142-219

3) Make sure that the ANTISKID INOP light on the P2-2 panel flashes four times.

LOM ALL

4) Make sure that the AUTOBRAKE DISARM light on the P2-2 panel is ON, then OFF, and then remains ON at the end of the test.

(h) Set the autobrake selector switch to the OFF position.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-00-410-001

(1) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-42-00-860-089

(2) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-42-00-860-090

(3) On Mode Select Unit (MSU), set the right and left IRS mode select switches to the OFF position.

SUBTASK 32-42-00-860-091

(4) Set the parking brake.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Antiskid/Autobrake Control Unit Test
Figure 501/32-42-00-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ANTISKID/AUTOBRAKE CONTROL UNIT

B

G35980 S0006575547_V3

Antiskid/Autobrake Control Unit Test
Figure 501/32-42-00-990-801 (Sheet 2 of 3)

EFFECTIVITY
LOM ALL; AIRPLANES WITH STEEL OR CARBON BRAKES

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ANTISKID/AUTOBRAKE CONTROL UNIT

B

2601045 S0000626266_V2

Antiskid/Autobrake Control Unit Test
Figure 501/32-42-00-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-00-720-802

3. Antiskid Valve Functional Test

(Figure 501, Figure 502)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-10813	Gauge Set, Pressure Check - Hydraulic Brake System Part #: C32051-1 Supplier: 81205 Opt Part #: F72977-45 Supplier: 81205 Opt Part #: F72977-46 Supplier: 81205 Opt Part #: F72977-47 Supplier: 81205 Opt Part #: F72977-62 Supplier: 81205
SPL-15031	Test Equipment - Brake Bleed Part #: G32075-16 Supplier: 81205

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Prepare for the Functional Test

SUBTASK 32-42-00-860-092

(1) For the normal (system B) and alternate (system A) hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-42-00-480-004

(2) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-00-860-011

(3) Release the parking brake.

SUBTASK 32-42-00-480-005

(4) Do these steps to install a pressure gage at each brake:

(a) Disconnect the brake at the brake disconnect:

1) Push the barrel toward the brake and rotate the barrel clockwise to disengage the brake half from the hose half.

2) Pull up on the barrel of the brake disconnect away from the brake until the threads of the two halves are engaged.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3) Turn the barrel counterclockwise to disconnect the brake hose from the brake assembly.

(b) Remove the brake bleeder assembly from the brake.

NOTE: Each brake bleeder assembly has a bleeder valve installed in an adapter. The adapter is installed in the brake.

(c) Install the pressure gauge, SPL-15031, or optional gauge set, SPL-10813.

(d) Connect the brake at the brake disconnect:

1) Turn the hose half of the brake disconnect until the internal tangs align with the slots inside the brake half of the brake disconnect and you can push the hose half down.

2) Push down on the barrel and turn it clockwise to engage the threads.

3) Turn the barrel clockwise until the slots in the bottom of the barrel snap into place on the external tangs on the brake half of the brake disconnect.

(e) Do a visual check to make sure that the slots on the barrel are fully and correctly engaged with the tangs on the brake half of the brake disconnect.

SUBTASK 32-42-00-860-013

WARNING KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, THE LANDING GEAR, AND THE DOORS FOR THE MAIN LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) For the normal (system B) hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-860-014

(6) Disable the parking brake indication:

(a) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-42-00-860-015

(7) Set the parking brake.

E. Normal Antiskid Valve Functional Test

SUBTASK 32-42-00-860-016

(1) Make sure that the hydraulic pressure at the controlled brake is within 200 psi (1379 kPa) of B hydraulic supply pressure.

SUBTASK 32-42-00-860-017

(2) Do these steps for each antiskid valve that you removed:

(a) Move the BRAKE TEST selector switch on the Antiskid/Autobrake Control Unit (AACU) to the wheel position for the brake valve that you will test.

NOTE: See the top of the AACU for the brake number.

(b) Push and hold the ENABLE/VERIFY switch on the AACU.

(c) Push and hold the VERIFY switch on the AACU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Release the ENABLE/VERIFY and the VERIFY switches at the same time.

NOTE: The AACU display will show BRK X during the test, where X = the wheel number selected by the BRAKE TEST selector switch.

(e) Make sure that the hydraulic pressure at the controlled brake is less than or equal to 150 psi (1034 kPa) for 5 to 10 seconds and then applies to within 200 psi (1379 kPa) of B hydraulic supply pressure.

(f) Move the BRAKE TEST selector switch to the NORM position.

F. Alternate Antiskid Valve Functional Test

SUBTASK 32-42-00-860-018

(1) For the normal (system B) hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-42-00-860-019

WARNING	KEEP PERSONNEL AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) For the alternate (system A) hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-860-020

(3) Do these steps for each alternate antiskid valve that you removed:

(a) Move the BRAKE TEST selector switch on the AACU to the position for the brake valve that you will test.

NOTE: Either 1 or 2 for the left alternate antiskid control valve, or 3 or 4 for the right alternate antiskid control valve.

(b) Push and hold the ENABLE/VERIFY switch on the AACU.

(c) Push and hold the VERIFY switch on the AACU.

(d) Release the ENABLE/VERIFY and the VERIFY switches at the same time.

NOTE: The AACU display will show BRK X during the test, where X = the wheel number selected by the BRAKE TEST selector switch.

(e) Make sure that the hydraulic pressures at the controlled brakes are less than or equal to 150 psi (1034 kPa) for 5 to 10 seconds and then applies to within 200 psi (1379 kPa) of A hydraulic supply pressure.

(f) Move the BRAKE TEST selector switch to the NORM position.

SUBTASK 32-42-00-860-093

(4) For the alternate (system A) hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-42-00-080-001

(5) Do these steps to remove the pressure gages at each brake:

(a) Disconnect the brake at the brake disconnect:

1) Pull up on the barrel of the brake disconnect.

2) Turn the barrel counterclockwise to disconnect the brake hose from the brake assembly.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the pressure gauge, SPL-15031, or optional gauge set, SPL-10813.

(c) Install the brake bleeder assembly on the brake.

NOTE: Each brake bleeder assembly has a bleeder valve installed in an adapter. The adapter is installed in the brake.

(d) Connect the brake at the brake disconnect:

1) Turn the hose half of the brake disconnect until the internal tangs align with the slots inside the brake half of the brake disconnect and you can push the hose half down.

2) Push down on the barrel and turn it clockwise to engage the threads.

3) Turn the barrel clockwise until the slots in the bottom of the barrel snap into place on the external tangs on the brake half of the brake disconnect.

(e) Do a visual check to make sure that the slots on the barrel are fully and correctly engaged with the tangs on the brake half of the brake disconnect.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-00-860-094

WARNING

KEEP PERSONNEL AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Pressurize hydraulic systems A and B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-710-001

(2) Enable the parking brake indication:

(a) Release the parking brake.

(b) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

(c) Set the parking brake.

SUBTASK 32-42-00-860-021

(3) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G35989 S0006575549_V2

Brake Line Disconnection and Pressure Gage Installation
Figure 502/32-42-00-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE HOSE HYDRAULIC DISCONNECT

B

PRESSURE GAGE INSTALLATION (EXAMPLE)

C

G35990 S0006575550_V2

Brake Line Disconnection and Pressure Gage Installation
Figure 502/32-42-00-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-00-710-801

4. Transducer Functional Test

(Figure 502, Figure 503)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1831	Spin Up Adapter - Wheel Speed Transducer, Anti-Skid System Part #: A32075-10 Supplier: 81205 Opt Part #: A32075-1 Supplier: 81205 Opt Part #: A32075-9 Supplier: 81205
SPL-10813	Gauge Set, Pressure Check - Hydraulic Brake System Part #: C32051-1 Supplier: 81205 Opt Part #: F72977-45 Supplier: 81205 Opt Part #: F72977-46 Supplier: 81205 Opt Part #: F72977-47 Supplier: 81205 Opt Part #: F72977-62 Supplier: 81205
SPL-15031	Test Equipment - Brake Bleed Part #: G32075-16 Supplier: 81205

C. Prepare for the Test

SUBTASK 32-42-00-860-080

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear (TASK 32-00-01-480-801).

SUBTASK 32-42-00-480-007

(2) Make sure that the tires have chocks installed around them (TASK 10-11-05-500-801 or TASK 10-11-05-500-802).

SUBTASK 32-42-00-860-022

(3) Release the parking brake.

SUBTASK 32-42-00-480-008

(4) Do these steps to install a pressure gauge at each brake (Figure 502):

(a) Disconnect the brake at the brake disconnect:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Pull up on the barrel of the brake disconnect.
2) Turn the barrel counterclockwise to disconnect the brake hose from the brake assembly.

(b) Remove the brake bleeder assembly from the brake.

NOTE: Each brake bleeder assembly has a bleeder valve installed in an adapter. The adapter is installed in the brake.

(c) Install the pressure gauge, SPL-15031, or the optional gauge set, SPL-10813, on the brake bleed port.

(d) Connect the brake at the brake disconnect:

1) Turn the hose half of the brake disconnect until the internal tangs align with the slots inside the brake half of the brake disconnect and you can push the hose half down.
2) Push down on the barrel and turn it clockwise to engage the threads.
3) Turn the barrel clockwise until the slots in the bottom of the barrel snap into place on the external tangs on the brake half of the brake disconnect.

(e) Do a visual check to make sure that the slots on the barrel are fully and correctly engaged with the tangs on the brake half of the brake disconnect.

SUBTASK 32-42-00-790-002

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-860-088

(6) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-42-00-860-024

(7) Set the parking brake.

D. Transducer Functional Test

SUBTASK 32-42-00-020-001

(1) Do these steps to remove the hubcap (Figure 503):

(a) For an outboard wheel, turn the Cam-Loc fasteners 1/4-turn to disconnect the fairing from the outboard hubcap.

(b) Remove the bolts and washers to disconnect the outboard hubcap or inboard hubcap from the wheel.

(c) Remove the outboard hubcap or inboard hubcap from the wheel.

SUBTASK 32-42-00-860-025

(2) Install the spin up adapter, SPL-1831, in a drill.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-00-860-026

(3) Make sure that the hydraulic pressure at all brakes is equal to the system B pressure +/- 200 psi (1379 kPa).

NOTE: This is to make sure that the antiskid system is not inadvertently releasing the brakes.

SUBTASK 32-42-00-710-002

(4) Do these steps for each transducer that you will test:

(a) Use the spin up adapter, SPL-1831, and a variable speed drill to turn the wheel speed transducer between 250 and 2200 RPM.

NOTE: We recommend that you keep the wheel speed below 60 knots. If the aircraft is not in this condition, the standby hydraulic pump can operate automatically.

(b) Make sure that the brake at the paired wheel is less than or equal to 150 psi (1034 kPa) (Table 501).

NOTE: The wheels are numbered from the left to the right.

Table 501/32-42-00-993-804 ANTISKID TRANSDUCER PAIR WHEELS

TRANSDUCER	CONTROLLED WHEEL	PAIRED WHEEL
1	1	4
2	2	3
3	3	2
4	4	1

(c) Stop the movement of the transducer as quickly as possible.

(d) Make sure that the controlled brake for the transducer you check is less than or equal to 150 psi (1034 kPa).

(e) Wait 5 to 10 seconds.

(f) Make sure that the hydraulic pressure at all brakes is equal to the system B pressure +/- 200 psi (1379 kPa).

SUBTASK 32-42-00-420-001

CAUTION

DO NOT TIGHTEN THE HUBCAP BOLTS TOO MUCH. MAKE SURE THAT THE HUBCAP IS IN THE CORRECT POSITION BEFORE YOU TIGHTEN THE BOLTS. TOO MUCH TORQUE WILL CAUSE DAMAGE TO THE BOLTS AND THE HUBCAP.

(5) Do these steps to install the hubcap:

(a) Turn the antiskid transducer dog inside the wheel such that the drive on the hubcap and the dog in the wheel will connect when the hubcap is installed.

(b) Put the hubcap in its position on the wheel.

(c) See the hubcap flush with the wheel assembly.

NOTE: Use a soft mallet to lightly tap the hubcap to make it flush.

(d) Install the bolts and washers to connect the hubcap to the wheel and torque the three bolts to 50 in-lb (6 N·m) - 80 in-lb (9 N·m).

(e) Install lockwire on the bolts.

(f) Do these steps for the outboard wheel:

1) Put the hubcap fairing on the hubcap.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Turn the Cam-Loc fasteners 1/4-turn to attach the fairing to the hubcap.

SUBTASK 32-42-00-080-002

(6) Do these steps to remove the pressure gauges at each brake:

(a) Disconnect the brake at the brake disconnect:

1) Pull up on the barrel of the brake disconnect.

2) Turn the barrel counterclockwise to disconnect the brake hose from the brake assembly.

(b) Remove the pressure gauge, SPL-15031, or the optional gauge set, SPL-10813.

(c) Install the brake bleeder assembly on the brake.

NOTE: Each brake bleeder assembly has a bleeder valve installed in an adapter. The adapter is installed in the brake.

(d) Connect the brake at the brake disconnect:

1) Turn the hose half of the brake disconnect until the internal tangs align with the slots inside the brake half of the brake disconnect and you can push the hose half down.

2) Push down on the barrel and turn it clockwise to engage the threads.

3) Turn the barrel clockwise until the slots in the bottom of the barrel snap into place on the external tangs on the brake half of the brake disconnect.

(e) Do a visual check to make sure the slots on the barrel are fully and correctly engaged with the tangs on the brake half of the brake disconnect.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-00-860-027

(1) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-42-00-860-028

(2) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-42-00-860-029

(3) Release the parking brake.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Main Landing Gear Hubcap Installation
Figure 503/32-42-00-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-00-720-803

5. Antiskid Valve Operational Test

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare to do an operational test of the antiskid valves:

SUBTASK 32-42-00-480-009

(1) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-00-860-030

(2) Release the parking brake.

SUBTASK 32-42-00-860-032

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) For the normal (system B) hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-860-033

(4) Disable the parking brake indication:

(a) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-42-00-860-034

(5) Set the parking brake.

D. Normal Antiskid Valve Operational Test

SUBTASK 32-42-00-860-035

(1) Do these steps for each antiskid valve that you removed:

(a) Move the BRAKE TEST selector switch on the Antiskid/Autobrake Control Unit (AACU) to the wheel position for the brake valve that you will test.

NOTE: See the top of the AACU for the brake number.

(b) Push and hold the ENABLE/VERIFY switch on the AACU.

(c) Push and hold the VERIFY switch on the AACU.

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(d) Release the ENABLE/VERIFY and the VERIFY switches at the same time.

NOTE: The AACU display will show BRK X during the test, where X = the wheel number selected by the BRAKE TEST selector switch.

(e) Make sure that the pistons on the applicable brake release and then apply again.

(f) Make sure that there are no fault codes on the AACU display.

(g) Move the BRAKE TEST selector switch to the NORM position.

E. Alternate Antiskid Valve Operational Test

SUBTASK 32-42-00-860-036

(1) For the normal (system B) hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-42-00-860-037

WARNING	KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(2) For the alternate (system A) hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-860-038

(3) Do these steps for each alternate antiskid valve that you removed:

(a) Move the BRAKE TEST selector switch on the AACU to the position for the brake valve that you will test.

NOTE: Either 1 or 2 for the left alternate antiskid control valve, or 3 or 4 for the right alternate antiskid control valve.

(b) Push and hold the ENABLE/VERIFY switch on the AACU.

(c) Push and hold the VERIFY switch on the AACU.

(d) Release the ENABLE/VERIFY and the VERIFY switches at the same time.

NOTE: The AACU display will show BRK X during the test, where X = the wheel number selected by the BRAKE TEST selector switch.

(e) Make sure that the pistons on the applicable brake pair release and then apply again.

(f) Make sure that there are no fault codes on the AACU display.

(g) Move the BRAKE TEST selector switch to the NORM position.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-00-710-003

(1) Enable the parking brake indication:

(a) Release the parking brake.

(b) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

(c) Set the parking brake.

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SUBTASK 32-42-00-860-039

(2) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

——— END OF TASK ———

TASK 32-42-00-400-801

6. Autobrake Pressure Control Module Functional Test

(Figure 501 and Figure 502)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
34-21-00-040-801	Air Data Inertial Reference System - Deactivation (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-10813	Gauge Set, Pressure Check - Hydraulic Brake System Part #: C32051-1 Supplier: 81205 Opt Part #: F72977-45 Supplier: 81205 Opt Part #: F72977-46 Supplier: 81205 Opt Part #: F72977-47 Supplier: 81205 Opt Part #: F72977-62 Supplier: 81205
SPL-15031	Test Equipment - Brake Bleed Part #: G32075-16 Supplier: 81205

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Autobrake Pressure Control Module Functional Test

SUBTASK 32-42-00-860-040

(1) Make sure that the two thrust levers are in the IDLE position.

SUBTASK 32-42-00-860-041

(2) Make sure that the LANDING GEAR control lever is in the DN position.

SUBTASK 32-42-00-860-042

(3) Make sure that the spoilers are stowed (SPD BRK lever in DN position).

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SUBTASK 32-42-00-860-043

(4) Make sure that the right and left Air Data Inertial Reference System (ADIRS) are in the NAV mode.

(a) Align the ADIRS (TASK 34-21-00-820-802 or TASK 34-21-00-820-801).

SUBTASK 32-42-00-480-018

WARNING	MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-00-480-010

(6) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-00-860-044

(7) Release the PARKING BRAKE.

SUBTASK 32-42-00-860-045

(8) Install the pressure gauge, SPL-15031, or the optional gauge set, SPL-10813, on each brake for the two Main Landing Gear (MLG).

SUBTASK 32-42-00-480-016

(9) Do these steps to install a pressure gage at each brake:

(a) Disconnect the brake at the brake disconnect:

1) Pull up on the barrel of the brake disconnect.

2) Turn the barrel counterclockwise to disconnect the brake hose from the brake assembly.

(b) Remove the brake bleeder assembly from the brake.

NOTE: Each brake bleeder assembly has a bleeder valve installed in an adapter. The adapter is installed in the brake.

(c) Install the pressure gauge on the brake bleed port.

(d) Connect the brake at the brake disconnect:

1) Turn the hose half of the brake disconnect until the internal tangs align with the slots inside the brake half of the brake disconnect and you can push the hose half down.

2) Push down on the barrel and turn it clockwise to engage the threads.

3) Turn the barrel clockwise until the slots in the bottom of the barrel snap into place on the external tangs on the brake half of the brake disconnect.

(e) Do a visual check to make sure that the slots on the barrel are fully and correctly engaged with the tangs on the brake half of the brake disconnect.

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SUBTASK 32-42-00-860-046

> **WARNING**
> KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(10) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-010-002

(11) To get access to the Antiskid/Autobrake Control Unit (AACU), on the E1-3 shelf, do this step:

(a) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-42-00-860-048

(12) Set the BRAKE TEST selector switch, on the AACU, to the A/B position.

NOTE: In Steps (11) through (15), if the AUTO BRAKE DISARM light is ON when you push the ENABLE/VERIFY switches, the test will not successfully complete and the display on the front panel of the AACU will show "BRK ####."

SUBTASK 32-42-00-860-049

(13) Do the steps that follow for AUTO BRAKE selector position 1.

(a) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the OFF position then to the 1 position.

(b) Push and then release the RESET switch on the AACU.

NOTE: The display on the front panel of the AACU will show "MEM CLR".

(c) Push and hold the ENABLE/VERIFY switch on the AACU.

(d) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the AACU.

(e) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The AACU display will show BRK A/B1 during the test.

(f) Make sure that the hydraulic pressure at any brake is 1250 ±250 psi (8618 ±1724 kPa) for approximately 10 to 30 seconds, then is 300 ±250 psi (2068 ±1724 kPa) for approximately 5 to 20 seconds, and then is less than 150 psi (1034 kPa).

(g) Make sure that the AUTO BRAKE DISARM light, on the P2-2 panel, comes on.

(h) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the OFF position.

SUBTASK 32-42-00-860-050

(14) Do the steps that follow for AUTO BRAKE selector position 2.

(a) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the 2 position.

(b) Push and hold the ENABLE/VERIFY switch on the AACU.

(c) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the AACU.

(d) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The AACU display will show BRK A/B2 during the test.

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(e) Make sure that the hydraulic pressure at any brake is 1500 ±250 psi (10,342 ±1724 kPa) for approximately 10 to 30 seconds, then is 300 ±250 psi (2068 ±1724 kPa) for approximately 5 to 20 seconds, and then is less than 150 psi (1034 kPa).

(f) Make sure that the AUTO BRAKE DISARM light, on the P2-2 panel, comes on.

(g) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the OFF position.

SUBTASK 32-42-00-860-051

(15) Do the steps that follow for AUTO BRAKE selector position 3.

(a) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the 3 position.

(b) Push and hold the ENABLE/VERIFY switch on the AACU.

(c) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the AACU.

(d) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The AACU display will show BRK A/B3 during the test.

(e) Make sure that the hydraulic pressure at any brake is 2000 ±250 psi (13,790 ±1724 kPa) for approximately 10 to 30 seconds, then is 300 ±250 psi (2068 ±1724 kPa)for approximately 5 to 20 seconds, and then is less than 150 psi (1034 kPa).

(f) Make sure that the AUTO BRAKE DISARM light, on the P2-2 panel, comes on.

(g) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the OFF position.

SUBTASK 32-42-00-860-052

(16) Do the steps that follow for AUTO BRAKE selector position MAX.

(a) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the MAX position.

(b) Push and hold the ENABLE/VERIFY switch on the AACU.

(c) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the AACU.

(d) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The AACU display will show BRK A/B4 during the test.

(e) Make sure that the hydraulic pressure at any brake is 3000 ±250 psi (20,684 ±1724 kPa) for approximately 10 to 30 seconds, then is 300 ±250 psi (2068 ±1724 kPa) for approximately 5 to 20 seconds, and then is less than 150 psi (1034 kPa).

(f) Make sure that the AUTO BRAKE DISARM light, on the P2-2 panel, comes on.

(g) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the OFF position.

SUBTASK 32-42-00-860-053

(17) Do the steps that follow for AUTO BRAKE selector position RTO.

(a) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the RTO position.

(b) Push and hold the ENABLE/VERIFY switch on the AACU.

(c) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the AACU.

(d) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The AACU display will show BRK RTO during the test.

(e) Make sure that the hydraulic pressure at any brake is 3000 ±250 psi (20,684 ±1724 kPa) for approximately 15 to 45 seconds, then decays to less than 150 psi (1034 kPa).

(f) Make sure that the AUTO BRAKE DISARM light, on the P2-2 panel, comes on.

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(g) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the OFF position.

SUBTASK 32-42-00-860-079

(18) Do the steps that follow to test the brake metered pressure switches.

(a) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the 1 position.

(b) Push and hold the left brake pedal to the stop.

(c) Make sure that the AUTO BRAKE DISARM light, on the P2-2 panel, comes on.

(d) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the OFF position and then set it back to the 1 position.

(e) Push and hold the right brake pedal to the stop.

(f) Make sure that the AUTO BRAKE DISARM light, on the P2-2 panel, comes on.

SUBTASK 32-42-00-860-054

(19) Set the AUTO BRAKE selector switch, on the P2-2 panel, to the OFF position.

SUBTASK 32-42-00-860-055

(20) Set the BRAKE TEST selector switch, on the AACU, to the NORM position.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-00-410-002

(1) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-42-00-860-056

(2) Do these steps to remove the pressure gages at each brake:

(a) Disconnect the brake at the brake disconnect:

1) Pull up on the barrel of the brake disconnect.

2) Turn the barrel in the counterclockwise direction to disconnect the brake hose from the brake assembly.

(b) Remove the pressure gauge, SPL-15031 or the optional gauge set, SPL-10813 on each brake for the two MLG.

(c) Install the brake bleeder assembly on the brake.

NOTE: Each brake bleeder assembly has a bleeder valve installed in an adapter. The adapter is installed in the brake.

(d) Connect the brake at the brake disconnect:

1) Turn the hose half of the brake disconnect until the internal tangs align with the slots inside the brake half of the brake disconnect and you can push the hose half down.

2) Push down on the barrel and turn it in the clockwise direction to engage the threads.

3) Turn the barrel in the clockwise direction until the slots in the bottom of the barrel snap into position on the external tangs on the brake half of the brake disconnect.

(e) Do a visual check to make sure that the slots on the barrel are fully and correctly engaged with the tangs on the brake half of the brake disconnect.

SUBTASK 32-42-00-860-057

(3) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-00-860-086

(4) Do this task: Air Data Inertial Reference System - Deactivation, TASK 34-21-00-040-801.

END OF TASK

TASK 32-42-00-400-802

7. Autobrake Shuttle Valve Operational Test

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare For the Operational Test

SUBTASK 32-42-00-860-058

(1) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-00-480-011

(2) Make sure the tires have chocks installed around them CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-00-860-059

(3) Release the parking brake.

SUBTASK 32-42-00-860-060

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

D. Operational Test of the Autobrake Shuttle Valve

SUBTASK 32-42-00-860-062

(1) Set the BRAKE TEST selector switch on the Antiskid/Autobrake Control Unit to A/B.

SUBTASK 32-42-00-860-063

(2) Set the autobrake selector switch on the P2-2 panel to RTO.

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SUBTASK 32-42-00-860-064

(3) Push and then release the RESET switch on the Antiskid/Autobrake Control Unit.

NOTE: The display on the front panel of the Antiskid/Autobrake Control Unit will show "MEM CLR".

SUBTASK 32-42-00-860-065

(4) Push and hold the ENABLE/VERIFY switch on the Antiskid/Autobrake Control Unit.

SUBTASK 32-42-00-860-066

(5) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the Antiskid/Autobrake Control Unit.

SUBTASK 32-42-00-860-067

(6) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

SUBTASK 32-42-00-480-012

(7) Make sure that all of the brakes apply and then release after approximately 10 to 45 seconds.

SUBTASK 32-42-00-860-068

(8) Set the autobrake selector switch on the P2-2 panel to OFF.

SUBTASK 32-42-00-860-069

(9) Set the BRAKE TEST switch on the Antiskid/Autobrake Control Unit to NORM.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-00-860-070

(1) Push the brake pedals fully to the stops and then release them after approximately 10 seconds.

(a) Make sure that the brakes apply and release with brake pedal movement.

SUBTASK 32-42-00-860-071

(2) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

TASK 32-42-00-710-802

8. Transducer Operational Test

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1831	Spin Up Adapter - Wheel Speed Transducer, Anti-Skid System Part #: A32075-10 Supplier: 81205 Opt Part #: A32075-1 Supplier: 81205 Opt Part #: A32075-9 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Transducer Operational Test

SUBTASK 32-42-00-480-013

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-42-00-480-014

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-00-860-072

(3) Release the parking brake.

SUBTASK 32-42-00-790-003

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-00-860-073

(5) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-42-00-860-074

(6) Set the parking brake.

SUBTASK 32-42-00-020-002

(7) If the hubcap is installed, do these steps to remove the hubcap:

(a) For an outboard wheel, turn the eight Cam-Loc fasteners 1/4 turn to disconnect the outboard hubcap fairing from the hubcap.

(b) Remove the three bolts and the washers to disconnect the hubcap from the wheel.

(c) Remove the hubcap from the wheel.

SUBTASK 32-42-00-020-003

(8) Do the steps that follow to check the mechanical condition of the transducer and drive coupling:

(a) Turn the transducer drive coupling while you do a check to make sure that you do not have these conditions:

1) Free play in the bearing for the transducer drive coupling.

2) A drive shaft for the transducer drive coupling that is bent.

SUBTASK 32-42-00-860-075

(9) Install the spin up adapter, SPL-1831 in a drill.

SUBTASK 32-42-00-710-004

(10) Do these steps for each transducer that you will test:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING KEEP PERSONS AND EQUIPMENT AWAY FROM THRUST REVERSERS. THE OPERATION OF THE WHEEL SPEED TRANSDUCER CAN CAUSE AUTOMATIC OPERATION OF THE STANDBY HYDRAULIC PUMP AND SUDDEN THRUST REVERSER MOVEMENTS. IF YOU DO NOT DO THIS, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

I (a) Use the spin up adapter, SPL-1831 and a variable speed drill to turn the wheel speed transducer between 250 and 2200 Revolutions Per Minute (RPM).

NOTE: We recommend that you keep the wheel speed below 60 knots. If the aircraft is not in this condition, the standby hydraulic pump can operate automatically.

(b) Make sure the brake at the paired wheel releases (Table 502).

NOTE: The wheels are numbered from the left to the right.

Table 502/32-42-00-993-805 ANTISKID TRANSDUCER PAIR WHEELS

TRANSDUCER	CONTROLLED WHEEL	PAIRED WHEEL
1	1	4
2	2	3
3	3	2
4	4	1

(c) Stop the movement of the transducer as quickly as possible.

(d) Make sure the controlled brake releases momentarily and then reapplies again in 5 to 10 seconds.

NOTE: You can see the brake apply and release if you watch the brake wear pins move.

SUBTASK 32-42-00-420-002

CAUTION DO NOT TIGHTEN THE HUBCAP BOLTS TOO MUCH. MAKE SURE THAT THE HUBCAP IS IN THE CORRECT POSITION BEFORE YOU TIGHTEN THE BOLTS. TOO MUCH TORQUE WILL CAUSE DAMAGE TO THE BOLTS AND THE HUBCAP.

(11) Do these steps to install the hubcap (Figure 503):

(a) Turn the antiskid transducer dog inside the wheel such that the drive on the hubcap and the dog in the wheel will connect when the hubcap is installed.

(b) Put the hubcap in its position on the wheel.

1) Visually make sure that the hubcap is flush with the wheel assembly.

NOTE: Use a soft mallet to lightly tap the hubcap to make it flush.

(c) Install the bolts and washers to connect the hubcap to the wheel and torque the three bolts to 50 in-lb (6 N·m) - 80 in-lb (9 N·m).

(d) Install lockwire on the bolts.

(e) Do these steps for the outboard wheel:

1) Put the hubcap fairing on the hubcap.

2) Turn the Cam-Loc fasteners 1/4 turn to attach the fairing to the hubcap.

SUBTASK 32-42-00-860-076

(12) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-00-860-077

(13) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-42-00-860-078

(14) Release the parking brake.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ANTISKID WHEEL SPEED TRANSDUCER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the transducer.

(2) An installation of the transducer.

TASK 32-42-11-000-801

2. Transducer Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1873	Wrench Set - Retainer Nut, Anti-skid Transducer, MLG Part #: C32021-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

E. Prepare for the Removal

SUBTASK 32-42-11-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-11-860-001

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	18	C00195	LANDING GEAR ANTISKID OUTBD

F. Transducer Removal

SUBTASK 32-42-11-020-001

(1) Do these steps to remove the hubcap [3]:

(a) For an outboard wheel, turn the eight CAM-LOCs [4] fasteners 1/4 turn to disconnect the outboard hubcap fairing [5] from the hubcap [3].

(b) Remove the three bolts [6] and the washers [7] to disconnect the hubcap [3] from the wheel assembly [1].

(c) Remove the hubcap [3] from the wheel assembly [1].

SUBTASK 32-42-11-020-002

(2) Remove the nuts [8], washers [9], and bolts [10] that hold the support [11] to the axle.

SUBTASK 32-42-11-020-003

(3) Do these steps to remove the transducer [14]:

NOTE: The transducer is held inside of the support with a locknut [13].

(a) Remove the MS20995C32 lockwire, G01048, from the locknut [13] .

(b) Remove the locknut [13] from the support [11] with locknut wrench set, SPL-1873.

(c) Remove the transducer [14] from the axle.

(d) Disconnect the electrical connector [12] from the transducer [14].

NOTE: Identify each electrical connector/wire with a label to record its initial position from the inboard or the outboard transducer.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G11321 S0006575562_V2

Transducer Installation
Figure 401/32-42-11-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G11580 S0006575563_V3

Transducer Installation
Figure 401/32-42-11-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-11-400-801

3. Transducer Installation

(Figure 401)

A. References

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
20-50-11-910-801	Standard Torque Values (P/B 201)
32-42-00-710-802	Transducer Operational Test (P/B 501)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1873	Wrench Set - Retainer Nut, Anti-skid Transducer, MLG Part #: C32021-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
14	Transducer	32-42-11-01-020	LOM ALL

E. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Transducer Installation

SUBTASK 32-42-11-860-005

(1) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-11-860-002

(2) If the support [11] came out of the axle, install the support in the axle with the slot on the back of the support at the top.

SUBTASK 32-42-11-420-001

(3) Do these steps to install the transducer [14]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Before you connect the electrical connector [12] to the back of the transducer [14], examine the electrical connector [12] for corrosion.

> **WARNING** DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(b) If there was corrosion, correct the problem (SWPM 20-60-03).

(c) Apply the D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

(d) Wind the electrical wire so that the overall coil diameter is approximately 50% of the internal diameter of the landing gear axle diameter.

NOTE: If not coiled, the wire bundle section inside the axle is somewhat stiff and may result in hard contact with the inside of the axle.

(e) Connect the electrical connector [12] to the back of the transducer [14].

NOTE: Use the label on each electrical connector/wire to find the correct position from the inboard or the outboard transducer.

> **CAUTION** DO NOT PULL OR TWIST THE WIRE HARNESS WHEN YOU INSTALL THE TRANSDUCER IN THE AXLE. YOU CAN CAUSE DAMAGE TO THE WIRES AND THE ANTISKID TRANSDUCER.

(f) Install the transducer [14] in the axle.

1) Install the transducer [14] in the assembly with the tab on the back of the transducer aligned with the slot inside the support [11].

(g) Do these steps to install the locknut [13]:

1) Install the locknut [13] in its position in the support.
2) Tighten the locknut [13] to 40 ft-lb (54 N·m) - 60 ft-lb (81 N·m) with the locknut wrench set, SPL-1873.
3) Loosen the locknut [13] to 0 ft-lb (0 N·m).
4) Tighten the locknut [13] to 30 ft-lb (41 N·m).
5) Install the MS20995C32 lockwire, G01048, between the locknut [13] and lockwire holes in the support [11] (TASK 20-10-44-400-801).

SUBTASK 32-42-11-860-003

(4) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-11-860-004

(5) Do this task: Transducer Operational Test, TASK 32-42-00-710-802.

SUBTASK 32-42-11-420-002

(6) Do these steps to install the bolts [10] to lock the support [11] to the axle assembly:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Install the bolts [10] with the head to the inside of the axle.

(b) Install the washers [9] and nuts [8].

(c) Do a check of the self locking nuts (TASK 20-50-11-910-801).

(d) Tighten the nuts [8] to 63 in-lb (7.1 N·m) - 67 in-lb (7.6 N·m).

SUBTASK 32-42-11-420-003

CAUTION	DO NOT TIGHTEN THE HUBCAP BOLTS TOO MUCH. MAKE SURE THAT THE HUBCAP IS IN THE CORRECT POSITION BEFORE YOU TIGHTEN THE BOLTS. TOO MUCH TORQUE WILL CAUSE DAMAGE TO THE BOLTS AND THE HUBCAP.

(7) Do these steps to install the hubcap [3]:

(a) Turn the transducer drive coupling the inside the wheel assembly [1] such that the drive on the hubcap [3] and the dog in the wheel will connect when the hubcap [3] is installed.

(b) Put the hubcap [3] in its position on the wheel assembly [1].

1) Turn it if it is necessary to engage the drive on the hubcap [3] with the drive coupling on the transducer [14].

(c) See the hubcap [3] flush with the wheel assembly [1].

NOTE: Use a soft mallet to lightly tap the hubcap to make it flush.

(d) Install the bolts [6] and washers [7] to attach the hubcap [3] to the wheel assembly [1].

(e) Tighten the bolts [6] to 50 in-lb (6 N·m) - 80 in-lb (9 N·m).

(f) Install MS20995C32 lockwire, G01048, on the bolts [6] (TASK 20-10-44-400-801).

(g) Do these steps for the outboard wheel:

1) Put the hubcap fairing [5] on the hubcap [3].

2) Turn the CAM-LOCs [4] fasteners 1/4 turn to attach the hubcap fairing [5] to the hubcap [3].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ANTISKID/AUTOBRAKE CONTROL UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the antiskid/autobrake control unit

(2) An installation of the antiskid/autobrake control unit.

B. The Antiskid/Autobrake Control unit [1] is in the electronic equipment rack, E1-3, which is in the left side of the main equipment center.

TASK 32-42-21-000-801

2. Antiskid/Autobrake Control Unit Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Prepare for the Removal

SUBTASK 32-42-21-860-001

(1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Antiskid/Autobrake Control Unit Removal

SUBTASK 32-42-21-840-001

CAUTION

DO NOT TOUCH THE ANTISKID/AUTOBRAKE CONTROL UNIT BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ANTISKID/AUTOBRAKE CONTROL UNIT.

(1) Do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 32-42-21-020-001

(2) To Remove the antiskid/autobrake control unit [1] from the airplane, do this task: E/E Box Removal, TASK 20-10-07-000-801.

SUBTASK 32-42-21-840-002

(3) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F62463 S0006575568_V2

Antiskid Control Unit Installation
Figure 401/32-42-21-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

[1] ANTISKID CONTROL UNIT

B

F62466 S0006575569_V2

Antiskid Control Unit Installation
Figure 401/32-42-21-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-21-400-801

3. Antiskid/Autobrake Control Unit Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-000-804	Conductive Dust Cap and Connector Cover Removal (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
32-42-00-720-801	Antiskid/Autobrake Control Unit Operational Test (P/B 501)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Antiskid/Autobrake Control Unit Installation

SUBTASK 32-42-21-840-003

CAUTION DO NOT TOUCH THE ANTISKID CONTROL UNIT BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ANTISKID CONTROL UNIT.

(1) Do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 32-42-21-840-004

(2) Do this task: Conductive Dust Cap and Connector Cover Removal, TASK 20-40-12-000-804.

SUBTASK 32-42-21-420-001

(3) To install the antiskid/autobrake control unit [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 32-42-21-860-002

(4) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-21-710-001

(5) Do this task: Antiskid/Autobrake Control Unit Operational Test, TASK 32-42-00-720-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ANTISKID VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the antiskid valve

(2) An installation of the antiskid valve.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 466-999; LOM 422-434, 437-447, 450-465 PRE SB 737-32-1528

B. There are four normal antiskid valves, one for each brake, located on the aft wall of the main landing gear wheel well.

C. There are two alternate antiskid valves, one for each main landing gear, located on the outboard walls of the main landing gear wheel well.

D. This procedure is applicable for all six antiskid valves.

E. In this procedure the antiskid valve will be referred to as the valve assembly [6].

LOM 422-434, 437-447, 450-465 POST SB 737-32-1528

F. There are two normal Unigain antiskid valves, located on the aft wall of the main landing gear wheel well.

G. There are two alternate antiskid valves, one for each main landing gear, located on the outboard walls of the main landing gear wheel well.

H. This procedure is applicable for all four antiskid valves.

I. In this procedure the antiskid valve will be referred to as the antiskid control valve [6].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 466-999; LOM 422-434, 437-447, 450-465 PRE SB 737-32-1528

TASK 32-42-31-000-801

2. Antiskid Valve Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Prepare for the Removal

SUBTASK 32-42-31-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-31-860-001

(2) For the normal (system B) and alternate (system A) hydraulic system, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-42-31-480-002

(3) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-31-860-002

(4) Release the parking brake.

SUBTASK 32-42-31-840-001

(5) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: It is necessary to operate the brake pedals approximately 12 times to fully release the pressure from the accumulator.

SUBTASK 32-42-31-860-003

(6) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Antiskid Valve Removal

> **CAUTION** BE CAREFUL WHEN YOU DISCONNECT THE HYDRAULIC LINES, UNIONS, FILTERS, AND CHECK VALVES FROM THE ANTISKID VALVES. DAMAGE TO THE ANTISKID VALVES CAN OCCUR.

SUBTASK 32-42-31-020-001

(1) Disconnect the electrical connector [14] from the antiskid valve assembly [6].

SUBTASK 32-42-31-020-002

(2) For the normal antiskid valve assembly, do these steps:

(a) Disconnect the hydraulic lines from the antiskid valve assembly [6].

(b) Disconnect the brake line from the union [12].

(c) Disconnect the return line from the union [12].

(d) Disconnect the pressure line from the filter [4].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 466-999; LOM 422-434, 437-447, 450-465 PRE SB 737-32-1528 (Continued)

SUBTASK 32-42-31-020-005

(3) For the alternate antiskid valve assembly, do these steps:

(a) Disconnect the hydraulic lines from the antiskid valve assembly [6].

(b) Disconnect the brake line from the union [12].

(c) Disconnect the return line from the check valve [13].

(d) Disconnect the pressure line from the filter [4].

SUBTASK 32-42-31-420-007

(4) Install the caps or plugs on the hydraulic lines.

SUBTASK 32-42-31-020-003

(5) Remove the bolt [8] and washer [7] to remove the antiskid valve assembly [6] from the airplane.

SUBTASK 32-42-31-020-004

(6) If the replacement antiskid valve assembly [6] does not have hydraulic fittings installed, do these steps:

(a) Remove the union [12] and packing [5].

(b) Remove the filter [11] and packing [10].

(c) Remove the check valve [13] and packing [5].

(d) Remove the filter [4] and packing [5].

(e) Discard the packing [5] and packing [10].

SUBTASK 32-42-31-480-004

(7) Install plugs in the ports of the antiskid valve assembly [6].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

F64675 S0006575574_V2

Antiskid Valve Installation
Figure 401/32-42-31-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ANTISKID CONTROL VALVE (EXAMPLE)

B

1 INSTALLED IN THE RETURN PORT ON THE ALTERNATE ANTISKID VALVE.

2 INSTALLED IN THE RETURN PORT ON THE NORMAL ANTISKID VALVE.

F67846 S0006575575_V4

Antiskid Valve Installation
Figure 401/32-42-31-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

F64675 S0006575574_V2

Cleaning of the Antiskid Valve
Figure 402/32-42-31-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Cleaning of the Antiskid Valve
Figure 402/32-42-31-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-31-400-801

3. **Antiskid Valve Installation**

(Figure 401)

A. **References**

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-870-802	Normal (System B) Hydraulic Brake System - Bleeding (P/B 201)
32-41-00-870-803	Alternate (System A) Hydraulic Brake System - Bleeding (P/B 201)
32-42-00-720-803	Antiskid Valve Operational Test (P/B 501)
51-31-00-390-804	Fillet Seal Application (P/B 201)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES
SWPM 20-60-03	Special Protection of Electrical Connectors

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

C. **Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50170	Compound - Corrosion Inhibiting Compound, Soft Film, Exterior Use - Ardrox AV25	

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description	Specification
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50225	Lockwire - MS20995C20, Corrosion Resistant Steel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Packing	29-21-52-05-490	LOM 422-434, 437-447, 450-999
		32-42-31-01-040	LOM ALL
		32-42-31-02-020	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-42-31-02-320	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-42-52-50-060	LOM ALL
6	Valve assembly	29-21-52-05-500	LOM 422-434, 437-447, 450-999
		32-42-31-01-015	LOM ALL
		32-42-31-01-045	LOM ALL
		32-42-31-02-030	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-42-31-02-330	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-42-52-50-010	LOM ALL
10	Packing	29-21-52-05-510	LOM 422-434, 437-447, 450-999
		32-42-52-50-070	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

F. Antiskid Valve Installation

SUBTASK 32-42-31-080-001

(1) Remove the plugs from the ports of the antiskid valve assembly [6].

SUBTASK 32-42-31-420-001

(2) If the replacement antiskid valve assembly [6] does not have hydraulic fittings installed, do these steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Lubricate the hydraulic union [12], check valve [13], filter [4], filter [11], packing [10], and packings [5] for the antiskid valve assembly [6] with hydraulic fluid, D00153.

(b) Install the new packings [5] on the hydraulic fittings and install the new packing [10] on the filter [11].

(c) Install the fittings in the valve assembly [6].

1) Install the filter [11] in the brake port of the antiskid valve assembly [6].

2) Install the hydraulic union [12] in the brake port of the antiskid valve assembly [6].

a) Tighten the hydraulic union [12] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

3) Install the fitting in the return port.

a) For the normal antiskid valves, install the hydraulic union [12] in the return port of the normal antiskid valve assembly [6].

<1> Tighten the hydraulic union [12] to 161 in-lb (18.2 N·m) - 179 in-lb (20.2 N·m).

b) For the alternate antiskid valves, install the hydraulic check valve [13] in the return port of the alternate antiskid valve assembly [6].

<1> Tighten the hydraulic check valve [13] to 161 in-lb (18.2 N·m) - 179 in-lb (20.2 N·m).

4) Install the hydraulic filter [4] in the pressure port of the antiskid valve assembly [6].

5) Install MS20995C20 lockwire, G50225, on the filter [4] and filter [11].

SUBTASK 32-42-31-100-001

(3) Do the steps below to help get a good electrical bond between the valve assembly [6] and bracket:

(a) To fully clean the mating surface of the bracket and valve assembly [6], do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

1) Clean the valve body and mating bracket surfaces at a minimum of two of the four lugs (Figure 402).

a) Do not clean more than the specified areas to prevent possible corrosion problems.

(b) For all cleaned areas, and if there is any damage to the finish on the valve assembly [6], manually apply coating, C00064.

SUBTASK 32-42-31-420-002

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(4) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to all of the areas of the fastener hole.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-31-390-002

(5) Apply sealant, A00247, to the cleaned areas faying surfaces.

NOTE: If necessary, you can apply the sealant for this procedure in a maximum interval of no more than eight weeks.

SUBTASK 32-42-31-420-006

(6) Hold the antiskid valve assembly [6] in its position on the airplane.

SUBTASK 32-42-31-420-003

(7) Install the bolts [8] and washers [7] that hold the antiskid valve assembly [6] to the airplane.

(a) Make sure that you install the bolts [8] and washers [7] immediately.

SUBTASK 32-42-31-080-003

(8) Measure the electrical bonding resistance between the body of the valve assembly [6] and bracket (SWPM 20-20-00).

(a) Use an intrinsically safe approved bonding meter, COM-1550.

(b) Make sure that the electrical bonding resistance is 0.0025 ohms (2.5 milliohms) or less.

SUBTASK 32-42-31-390-001

(9) Apply sealant, A00247, to the edge of the antiskid valve assembly [6] around the mating surface, do this task: Fillet Seal Application, TASK 51-31-00-390-804.

NOTE: If necessary, you can apply the sealant for this procedure in a maximum interval of no more than eight weeks.

SUBTASK 32-42-31-080-002

(10) Remove the caps or plugs from the hydraulic lines.

SUBTASK 32-42-31-420-008

(11) For the normal antiskid valve assembly [6], do these steps:

(a) Connect the hydraulic lines to the antiskid valve assembly [6].

(b) Connect the brake hydraulic line [15] to the union [12].

(c) Tighten the B-nut on the hydraulic line [15] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(d) Connect the return hydraulic lines [16] to the union [12].

(e) Tighten the B-nuts on the hydraulic lines [16] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(f) Connect the pressure hydraulic line [17] to the filter [4].

(g) Tighten the B-nut on the hydraulic line [17] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

SUBTASK 32-42-31-420-004

(12) For the alternate antiskid valve assembly [6], do these steps:

(a) Connect the hydraulic lines to the antiskid valve assembly [6].

(b) Connect the brake hydraulic line [15] to the union [12].

(c) Tighten the B-nut on the brake hydraulic line [15] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(d) Connect the return hydraulic lines [16] to the check valve [13].

(e) Tighten the B-nut on the return hydraulic lines [16] to 161 in-lb (18.2 N·m) - 179 in-lb (20.2 N·m).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(f) Connect the pressure hydraulic line [17] to the filter [4].

(g) Tighten the B-nut on the pressure hydraulic line [17] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

SUBTASK 32-42-31-420-005

(13) Before you connect the electrical connector [14] to the antiskid valve assembly [6], examine the electrical connector [14] for corrosion.

> **WARNING**
> DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, correct the problem (SWPM 20-60-03).

(b) Apply D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

SUBTASK 32-42-31-420-015

(14) Connect the electrical connector [14] to the antiskid valve assembly [6].

SUBTASK 32-42-31-860-004

(15) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

G. Antiskid Valve Installation Test

SUBTASK 32-42-31-790-001

(1) Do these steps to do a leak check of the antiskid valve:

> **WARNING**
> MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) For the normal (system B) and alternate (system A) hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Fully push the captain's brake pedals twelve times.

(c) Look for leaks around the antiskid valve.

SUBTASK 32-42-31-710-001

(2) Bleed the hydraulic system.

(a) For the normal antiskid valves, do this task: Normal (System B) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) For the alternate antiskid valves, do this task: Alternate (System A) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-803.

SUBTASK 32-42-31-860-015

(3) Do this task: Antiskid Valve Operational Test, TASK 32-42-00-720-803.

SUBTASK 32-42-31-860-016

(4) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-42-31-390-003

(5) Apply Ardrox AV25 compound, G50170, to the external surface of the connector from the side of the connector (SWPM 20-60-03).

END OF TASK

LOM 422-434, 437-447, 450-465 POST SB 737-32-1528

TASK 32-42-31-000-802

4. Antiskid Valve Removal

(Figure 403, Figure 404)

A. General

(1) This task includes the steps to remove the antiskid valve.

B. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

Reference	Description
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Removal

SUBTASK 32-42-31-480-005

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-31-860-018

(2) For the normal (system B) and alternate (system A) hydraulic system, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-42-31-480-006

(3) Make sure that the tires have chocks installed around them.

(a) To install chocks around the tires, do this task: Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801 or Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802.

SUBTASK 32-42-31-860-019

(4) Release the parking brake.

SUBTASK 32-42-31-840-002

(5) Operate the brake pedals until the gauge at the brake accumulator shows no change in the pressure.

NOTE: It is necessary to operate the brake pedals a minimum of 14 times to fully release the pressure from the accumulator.

SUBTASK 32-42-31-860-020

(6) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

F. Antiskid Valve Removal

> **CAUTION** BE CAREFUL WHEN YOU DISCONNECT THE HYDRAULIC LINES, UNIONS, FILTERS, AND CHECK VALVES FROM THE ANTISKID VALVES. DAMAGE TO THE ANTISKID VALVES CAN OCCUR.

SUBTASK 32-42-31-020-006

(1) Disconnect the electrical connectors [14] from the antiskid control valve [6].

SUBTASK 32-42-31-020-007

(2) For the right normal antiskid control valve [6], do the these steps:

(a) Disconnect the hydraulic lines from the antiskid control valve [6].

(b) Disconnect the brake hydraulic line [33] from the union [12].

(c) Disconnect the return hydraulic line [32] and return hydraulic line [34] from the tee fitting.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Disconnect the pressure hydraulic line [31] and pressure hydraulic line [35] from the filter [4].

(e) Disconnect the pressure hydraulic line [30] from the filter [18].

(f) Install the cap/plug, STD-14686, on the hydraulic lines.

(g) Remove the bolt [9], washer [7], washer [16], bonding jumper [15], and washer [17].

(h) Remove the bolts [8] and washers [7] to remove the antiskid control valve [6] from the airplane.

SUBTASK 32-42-31-020-008

(3) For the left normal antiskid control valve [6], do the these steps:

(a) Disconnect the hydraulic lines from the antiskid control valve [6].

(b) Disconnect the brake hydraulic line [38] from the filter [4].

(c) Disconnect the return hydraulic line [40].

(d) Disconnect the pressure hydraulic line [36] and pressure hydraulic line [39] from the filter [4].

(e) Disconnect the pressure hydraulic line [37] from filter [18].

(f) Install the cap/plug, STD-14686, on the hydraulic lines.

(g) Remove the bolt [9], washer [7], washer [16], bonding jumper [15], and washer [17].

(h) Remove the bolts [8] and washers [7] to remove the antiskid control valve [6] from the airplane.

SUBTASK 32-42-31-020-009

(4) For the alternate antiskid control valve [6], do these steps:

(a) Disconnect the brake hydraulic line [41] from the union [12].

(b) Disconnect the return hydraulic line [42] from the check valve [13].

(c) Disconnect the pressure hydraulic line [43] and pressure hydraulic line [44] from the tee fitting.

(d) Install the cap/plug, STD-14686, on the hydraulic lines.

(e) Remove the bolts [8] and washers [7] to remove the antiskid control valve [6] from the airplane.

SUBTASK 32-42-31-020-010

(5) If the replacement antiskid control valve [6] does not have hydraulic fittings installed, do these steps:

(a) Remove the union [12] and packing [5].

(b) Remove the filter [11] and packing [10].

(c) Remove the check valve [13] and packing [5].

(d) Remove the filters [4] and packings [5].

(e) Remove the filter [18] and packing [19].

(f) Discard the packings [5], packing [10], and packing [19].

SUBTASK 32-42-31-480-007

(6) Install the cap/plug, STD-14686, in the ports of the antiskid control valve [6].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL

A

2894043 S0000689746_V1

Antiskid Valve Installation
Figure 403/32-42-31-990-803 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NORMAL ANTISKID VALVE (RIGHT)

B

2894233 S0000689747_V2

Antiskid Valve Installation
Figure 403/32-42-31-990-803 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NORMAL ANTISKID VALVE
(LEFT)

C

2894235 S0000689748_V2

Antiskid Valve Installation
Figure 403/32-42-31-990-803 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

D

2894236 S0000689750_V1

Antiskid Valve Installation
Figure 403/32-42-31-990-803 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ALTERNATE ANTISKID VALVE

E

2894237 S0000689751_V2

Antiskid Valve Installation
Figure 403/32-42-31-990-803 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

A

2894239 S0000689752_V1

Cleaning of the Antiskid Valve
Figure 404/32-42-31-990-804 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Cleaning of the Antiskid Valve
Figure 404/32-42-31-990-804 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-31-400-802

5. **Antiskid Valve Installation**
(Figure 403, Figure 404)

A. **General**

(1) This task includes the steps to install the antiskid valve.

B. **References**

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-40-11-760-801	Electrical Bonding (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-870-802	Normal (System B) Hydraulic Brake System - Bleeding (P/B 201)
32-41-00-870-803	Alternate (System A) Hydraulic Brake System - Bleeding (P/B 201)
32-42-00-720-803	Antiskid Valve Operational Test (P/B 501)
51-31-00-390-804	Fillet Seal Application (P/B 201)
SWPM 20-60-03	Special Protection of Electrical Connectors

C. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

D. **Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 422-434, 437-447, 450-465 POST SB 737-32-1528 (Continued)

(Continued)

Reference	Description	Specification
G50170	Compound - Corrosion Inhibiting Compound, Soft Film, Exterior Use - Ardrox AV25	
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50225	Lockwire - MS20995C20, Corrosion Resistant Steel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Packing	29-21-52-05-490	LOM 422-434, 437-447, 450-465
		32-42-31-01-040	LOM 422-434, 437-447, 450-465
		32-42-52-50-060	LOM 422-434, 437-447, 450-465
10	Packing	29-21-52-05-510	LOM 422-434, 437-447, 450-465
		32-42-52-50-070	LOM 422-434, 437-447, 450-465

F. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

G. Antiskid Valve Installation

SUBTASK 32-42-31-080-004

(1) Remove the cap/plug, STD-14686, from the ports of the antiskid control valve [6].

SUBTASK 32-42-31-420-009

(2) If the replacement antiskid control valve [6] does not have hydraulic fittings installed, do these steps:

(a) Lubricate the union [12], check valve [13], filter [4], filter [11], filter [18], new packing [10], new packing [19], and new packings [5] for the antiskid control valve [6] with hydraulic fluid, D00153.

(b) Install the new packings [5] on the hydraulic fittings and install the new packing [10] on the filter [11] and new packing [19] on the filter [18].

(c) Install the fittings in the antiskid control valve [6]:

1) Install the filter [11] in the brake port of the antiskid control valve [6].

2) Install the union [12] in the brake port of the antiskid control valve [6].

a) Tighten the union [12] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3) Install the fitting in the return port:

a) For the Normal antiskid control valve [6], install the union [12] in the return port of the normal antiskid control valve [6].

<1> Tighten the union [12] to 161 in-lb (18.2 N·m) - 179 in-lb (20.2 N·m).

b) For the Alternate antiskid control valve [6], install the check valve [13] in the return port of the alternate antiskid control valve [6].

<1> Tighten the check valve [13] to 161 in-lb (18.2 N·m) - 179 in-lb (20.2 N·m).

4) Install the filters [4] and filter [18] in the pressure port of the antiskid control valve [6].

(d) Install MS20995C20 lockwire, G50225, on the filter [4], filter [11], check valve [13], and filter [18].

SUBTASK 32-42-31-420-010

(3) For the normal antiskid control valve [6], do these steps:

(a) To fully clean the mating surface between the bonding jumper [15] and antiskid control valve [6], do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

(b) For all cleaned areas, and if there is any damage to the finish on the antiskid control valve [6], manually apply coating, C00064.

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(c) Apply Cor-Ban 27L Compound, G50237, to all of the areas of the fastener hole.

1) Make sure that you install the bolts [8] and washers [7] immediately.

(d) Apply sealant, A00247, to the mating surfaces of the bonding jumper [15] and antiskid control valve [6].

NOTE: If necessary, you can apply the sealant for this procedure in a maximum interval of no more than eight weeks.

(e) Hold the antiskid control valve [6] in its position on the airplane.

(f) Install the bolts [8] and washers [7] which hold the antiskid control valve [6] to the airplane.

1) Tighten the bolts [8] to 63 in-lb (7.1 N·m) - 77 in-lb (8.7 N·m).

(g) Install the washer [17], bonding jumper [15], washer [16], washer [7], and bolt [9].

1) Tighten the bolt [9] to 63 in-lb (7.1 N·m) - 77 in-lb (8.7 N·m).

2) Measure the electrical bonding resistance between the body of the antiskid control valve [6] and bonding jumper [15] (TASK 20-40-11-760-801).

a) Use an intrinsically safe approved bonding meter, COM-1550.

b) Make sure that the electrical bonding resistance is 0.001 ohm (1.0 milliohm) or less.

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LOM 422-434, 437-447, 450-465 POST SB 737-32-1528 (Continued)

SUBTASK 32-42-31-420-011

(4) For the alternate antiskid control valve [6], do these steps to help get a good electrical bond between the antiskid control valve [6] and bracket:

(a) To fully clean the mating surface of the bracket and antiskid control valve [6], do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

1) Clean the valve body and mating bracket surfaces at a minimum of two of the four lugs (Figure 404).

NOTE: Do not clean more than the specified areas to prevent possible corrosion problems.

(b) For all cleaned areas, and if there is any damage to the finish on the antiskid control valve [6], manually apply coating, C00064.

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(c) Apply Cor-Ban 27L Compound, G50237, to all of the areas of the fastener hole.

1) Make sure that you install the bolts [8] and washers [7] immediately.

(d) Apply sealant, A00247, to the cleaned areas faying surfaces.

NOTE: If necessary, you can apply the sealant for this procedure in a maximum interval of no more than eight weeks.

(e) Hold the antiskid control valve [6] in its position on the airplane.

(f) Install the bolts [8] and washers [7] which hold the antiskid control valve [6] to the airplane.

1) Tighten the bolts [8] to 63 in-lb (7.1 N·m) - 77 in-lb (8.7 N·m).

(g) Measure the electrical bonding resistance between the body of the antiskid control valve [6] and bracket (TASK 20-40-11-760-801).

1) Use an intrinsically safe approved bonding meter, COM-1550.

2) Make sure that the electrical bonding resistance is 0.0025 ohms (2.5 milliohms) or less.

(h) Apply sealant, A00247, to the edge of the antiskid control valve [6] around the mating surface (TASK 51-31-00-390-804).

NOTE: If necessary, you can apply the sealant for this procedure in a maximum interval of no more than eight weeks.

SUBTASK 32-42-31-080-005

(5) Remove the cap/plug, STD-14686, from the hydraulic lines.

SUBTASK 32-42-31-420-012

(6) For the right normal antiskid control valve [6], do these steps:

(a) Connect the hydraulic lines to the antiskid control valve [6].

(b) Connect the brake hydraulic line [33] to the union [12].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Tighten the B-nut on brake hydraulic line [33] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(c) Connect the return hydraulic line [32] and return hydraulic line [34] to the tee fitting.

1) Tighten the B-nut on return hydraulic line [32] to 133 in-lb (15.0 N·m) - 147 in-lb (16.6 N·m).

2) Tighten the B-nut on return hydraulic line [34] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(d) Connect the pressure hydraulic line [31] and pressure hydraulic line [35] to the filter [4].

1) Tighten the B-nuts on pressure hydraulic line [31] and pressure hydraulic line [35] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(e) Connect the pressure hydraulic line [30] to the filter [18].

1) Tighten the B-nut on pressure hydraulic line [30] to 133 in-lb (15.0 N·m) - 147 in-lb (16.6 N·m).

SUBTASK 32-42-31-420-013

(7) For the left normal antiskid control valve [6], do the these steps:

(a) Connect the hydraulic lines to the antiskid control valve [6].

(b) Connect the brake hydraulic line [38] to the filter [4].

1) Tighten the B-nut on brake hydraulic line [38] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(c) Connect the return hydraulic line [40].

1) Tighten the B-nut on return hydraulic line [40] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(d) Connect the pressure hydraulic line [36] and pressure hydraulic line [39] to the filter [4].

1) Tighten the B-nuts on pressure hydraulic line [36] and pressure hydraulic line [39] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(e) Connect the pressure hydraulic line [37] to the filter [18].

1) Tighten the B-nut on pressure hydraulic line [37] to 133 in-lb (15.0 N·m) - 147 in-lb (16.6 N·m).

SUBTASK 32-42-31-420-014

(8) For the alternate antiskid control valve [6], do these steps:

(a) Connect the brake hydraulic line [41] to the union [12].

1) Tighten the B-nut on brake hydraulic line [41] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(b) Connect the return hydraulic line [42] to the check valve [13].

1) Tighten the B-nut on return hydraulic line [42] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

(c) Connect the pressure hydraulic line [43] and pressure hydraulic line [44] to the tee fitting.

1) Tighten the B-nut on pressure hydraulic line [43] to 133 in-lb (15.0 N·m) - 147 in-lb (16.6 N·m).

2) Tighten the B-nut on pressure hydraulic line [44] to 256 in-lb (28.9 N·m) - 284 in-lb (32.1 N·m).

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LOM 422-434, 437-447, 450-465 POST SB 737-32-1528 (Continued)

SUBTASK 32-42-31-210-001

(9) Before you connect the electrical connector [14] to the antiskid control valve [6], examine the electrical connector [14] for corrosion.

> **WARNING** DO THE STEPS BELOW WHEN YOU OPERATE THE AIRPLANE WHERE YOU USE DEICING FLUID (THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE). ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT. IF YOU DO NOT DO THESE STEPS, YOU CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONNEL.

(a) If there was corrosion, correct the problem (SWPM 20-60-03).

(b) Apply D5026NS or ZC-026 compound, G50171, to the electrical connector [14] (SWPM 20-60-03).

SUBTASK 32-42-31-420-016

(10) Connect the electrical connectors [14] to the antiskid control valve [6].

SUBTASK 32-42-31-860-021

(11) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

H. Antiskid Valve Installation Test

SUBTASK 32-42-31-790-002

(1) Do these steps to do a leak check of the antiskid control valve [6]:

> **WARNING** MAKE SURE THAT EQUIPMENT AND PERSONNEL ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) For the normal (system B) and alternate (system A) hydraulic systems, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Fully push the captain's brake pedals twelve times.

(c) Look for leaks around the antiskid control valve [6].

SUBTASK 32-42-31-870-001

(2) Bleed the hydraulic system.

(a) For the Normal antiskid control valve [6], do this task: Normal (System B) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-802.

(b) For the alternate antiskid control valve [6], do this task: Alternate (System A) Hydraulic Brake System - Bleeding, TASK 32-41-00-870-803.

SUBTASK 32-42-31-710-002

(3) Do this task: Antiskid Valve Operational Test, TASK 32-42-00-720-803.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-31-860-022

(1) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-42-31-390-004

(2) Apply Ardrox AV25 compound, G50170, to the external surface of the connector from the side of the connector (SWPM 20-60-03).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ANTISKID LANDING GEAR LEVER UP SWITCH - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the antiskid landing gear lever up switch

(2) An installation of the antiskid landing gear lever up switch

B. The antiskid landing gear lever up switch is located in the control cabin.

TASK 32-42-51-000-801

2. Antiskid Landing Gear Lever Up Switch Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-31-11-020-801	Landing Gear Control Lever Module Removal (P/B 401)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Removal

SUBTASK 32-42-51-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-51-480-002

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Antiskid Landing Gear Lever Up Switch Removal

SUBTASK 32-42-51-480-003

(1) Do this task: Landing Gear Control Lever Module Removal, TASK 32-31-11-020-801.

SUBTASK 32-42-51-420-005

(2) Remove the switch [4] and [5]:

NOTE: The switch [4] is referred to as switch S3 [4] S3 and the switch [5] is referred to as switch S4 [5] in some portions of this procedure.

(a) Disconnect the electrical terminals [8] from the switch S3 [4] and switch S4 [5].

(b) Attach labels to the terminals to make the switch installation easier.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Remove the bolts [6], the washers [7], [9], and the nuts [10] that hold the switch S3 [4], switch S4 [5], to the control module [1].

(d) Remove the switch S3 [4], switch S4 [5] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Antiskid Landing Gear Lever Up Switch Installation
Figure 401/32-42-51-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ELECTRICAL RECEPTACLE

A-A

ANTISKID LANDING GEAR LEVER UP SWITCH

B

G14020 S0006575581_V2

Antiskid Landing Gear Lever Up Switch Installation
Figure 401/32-42-51-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-51-420-801

3. Antiskid Landing Gear Lever Up Switch Installation

(Figure 401)

A. References

Reference	Title
32-31-11-400-801	Landing Gear Control Lever Module Installation (P/B 401)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1322	Multimeter (Analog / Digital with sufficient internal voltage to measure long cable distances) Part #: 117 Supplier: 89536 Part #: 260-8XPI Supplier: 55026 Part #: FLUKE 289 Supplier: 89536 Opt Part #: MODEL 8 MK7 Supplier: 00426
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659
COM-1793	Multimeter - Digital/Analog (or equivalent meter meets task requirements) Part #: 117 Supplier: 89536 Part #: 260-8XPI Supplier: 55026 Part #: 287 Supplier: 89536 Part #: 289 Supplier: 89536 Part #: 87V Supplier: 89536 Part #: FLUKE 27 II Supplier: 89536 Part #: FLUKE-77-4 Supplier: 89536 Opt Part #: 187 Supplier: 89536 Opt Part #: 189 Supplier: 89536 Opt Part #: 21 Supplier: 89536 Opt Part #: 27 Supplier: 89536 Opt Part #: 77 SERIES III Supplier: 89536 Opt Part #: 87 Supplier: 89536 Opt Part #: FLUKE 27 Supplier: 89536 Opt Part #: MODEL 27 Supplier: 89536

C. Consumable Materials

Reference	Description	Specification
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	

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D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Switch S3	32-31-11-02-030	LOM ALL
		32-31-11-02-040	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422
5	Switch S4	32-31-11-02-030	LOM ALL
		32-31-11-02-040	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422

E. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

F. Antiskid Landing Gear Lever Up Switch Installation

NOTE: The switch [4] is referred to as switch S3 [4] and the switch [5] is referred to as switch S4 [5] in some portions of this procedure.

SUBTASK 32-42-51-420-001

(1) Put the switch S3 [4], and switch S4 [5], in their positions in the landing gear lever control module [1].

SUBTASK 32-42-51-420-002

(2) Install the bolts [6], washers [7], washers [9] and nuts [10].

NOTE: These parts hold the switch S3 [4] and switch S4 [5], to the control module [1].

SUBTASK 32-42-51-420-003

(3) Connect the electrical terminals [8] to the switch S3 [4] and switch S4 [5].

G. Do a Continuity check of the Switches

SUBTASK 32-42-51-020-004

(1) Disconnect the electrical connector [3] from the electrical receptacle [2] on the control module [1].

SUBTASK 32-42-51-480-004

(2) Use an intrinsically safe approved bonding meter, COM-1550, multimeter, COM-1322, or digital/analog multimeter, COM-1793, to measure the continuity between the connector pins, in the electrical receptacle [2], listed inTable 401:

NOTE: See Figure 401 for the pin locations.

NOTE: Use the lever lock override to move the landing gear lever to the UP position.

(a) Make sure that the ohmmeter shows continuity between the pins or an open circuit between the pins for the corresponding lever positions.

Table 401/32-42-51-993-802 Landing Gear lever Up Switches Continuity Check

SWITCH TEST ITEM	D12114 CONNECTOR PINS	LANDING GEAR CONTROL LEVER POSITION		
		"UP"	"OFF" (CENTER)	"DN"
S3	14 - 16	OPEN	CONT	CONT
	14 - 15	CONT	OPEN	OPEN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 401/32-42-51-993-802 Landing Gear lever Up Switches Continuity Check (Continued)

SWITCH TEST ITEM	D12114 CONNECTOR PINS	LANDING GEAR CONTROL LEVER POSITION		
		"UP"	"OFF" (CENTER)	"DN"
S4	11 - 13	OPEN	CONT	CONT
	11 - 12	CONT	OPEN	OPEN

SUBTASK 32-42-51-420-004

(3) Before you connect the electrical connector [3] to the electrical receptacle [2] on the control module [1], examine the electrical connector [3] for corrosion.

> **WARNING** DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, refer to SWPM 20-60-03 to correct the problem.

(b) Apply the D5026NS or ZC-026 compound, G50171 to the connector (SWPM 20-60-03).

H. Put the Airplane Back to its Usual Condition

SUBTASK 32-42-51-480-005

(1) Do this task: Landing Gear Control Lever Module Installation, TASK 32-31-11-400-801.

SUBTASK 32-42-51-480-006

(2) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AUTOBRAKE SELECTOR SWITCH - REMOVAL/INSTALLATION

1. General

A. The Autobrake Selector Switch (S4) is installed on the P2-2 panel.

B. This procedure contains the following tasks:

(1) Autobrake Selector Switch - Removal

(2) Autobrake Selector Switch - Installation

TASK 32-42-61-000-801

2. Autobrake Selector Switch - Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for Removal

SUBTASK 32-42-61-490-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlocks are not installed on all of the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-61-860-023

(2) Do this Task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 32-42-61-490-002

(3) Put chocks around the tires of all of the landing gear wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-61-860-002

(4) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

D. Autobrake Selector Switch Removal

SUBTASK 32-42-61-020-004

(1) Remove the selector switch knob [6] from the shaft of the autobrake selector switch [7].

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SUBTASK 32-42-61-020-005

(2) Remove the knobs [8] and [9].

SUBTASK 32-42-61-020-007

(3) Remove the lightplate [10].

SUBTASK 32-42-61-020-008

(4) Loosen the fasteners that attach the engine/autobrake control panel assembly, P2-2 [5] to the P2 panel.

SUBTASK 32-42-61-020-001

(5) Remove the engine/autobrake control panel assembly, P2-2 [5] from the P2 panel.

SUBTASK 32-42-61-020-002

(6) Disconnect the electrical connector [1] from the autobrake selector switch [2].

SUBTASK 32-42-61-020-003

(7) Remove the autobrake selector switch [2] from the control panel [5] with these steps.

(a) Remove the nut [3] and the washer [4] which holds the autobrake selector switch in the control panel [5].

(b) Remove the autobrake selector switch [2] from the control panel [5].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

P2

U33843 S0000192823_V2

Autobrake Selector Switch Installation
Figure 401/32-42-61-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U33858 S0000192824_V3

Autobrake Selector Switch Installation
Figure 401/32-42-61-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CONTROL PANEL, P2-2

D

U53462 S0000205127_V2

Autobrake Selector Switch Installation
Figure 401/32-42-61-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-61-400-801

3. Autobrake Selector Switch - Installation

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
34-21-00-040-801	Air Data Inertial Reference System - Deactivation (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Autobrake Selector Switch Installation

SUBTASK 32-42-61-420-001

(1) Install the autobrake selector switch [2] in the P2-2 panel with these steps:

(a) Install the electrical connector [1] on the autobrake selector switch [2].

(b) Install the autobrake selector switch [2] in the control panel [5].

(c) Install the washer [4] and nut [3] on the shaft of the autobrake selector switch [7] that hold the autobrake selector switch [2] to the panel and tighten the nut.

(d) Install the lightplate [10].

(e) Install the switch knob [6] on the shaft of the autobrake selector switch [7].

(f) Install the knobs [8] and [9].

SUBTASK 32-42-61-420-002

(2) Install the P2-2 panel [5] in the P2 panel and tighten the fasteners.

SUBTASK 32-42-61-865-001

(3) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

D. Autobrake Selector Switch Installation Test

SUBTASK 32-42-61-860-004

(1) Make sure the two thrust levers are in the IDLE position.

SUBTASK 32-42-61-860-007

(2) Make sure the landing gear control lever is in the DN position.

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SUBTASK 32-42-61-860-008

(3) Make sure the spoilers are stowed.

SUBTASK 32-42-61-860-009

(4) Make sure the Right and Left ADIRSs are in the NAV mode.

(a) Align the ADIRS. To do this, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801 or do this task: Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 32-42-61-480-001

(5) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-61-860-010

(6) Release the parking brake.

SUBTASK 32-42-61-860-011

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(7) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-42-61-860-013

(8) Set the BRAKE TEST selector switch on the Antiskid/Autobrake Control Unit to A/B.

NOTE: In Steps (10) through (14), if the AUTOBRAKE disarm light is on when you push the enable/verify switches, the test will not successfully complete and the display on the front panel of the Antiskid/Autobrake Control Unit will show “BRK ####”.

SUBTASK 32-42-61-860-014

(9) Do the steps that follow for autobrake selector position “1”.

(a) Set the autobrake selector switch on the P2-2 panel to “OFF” then to the “1” position.

(b) Push and then release the RESET switch on the Antiskid/Autobrake Control Unit.

NOTE: The display on the front panel of the Antiskid/Autobrake Control Unit will show “MEM CLR”.

(c) Push and hold the ENABLE/VERIFY switch on the Antiskid/Autobrake Control Unit.

(d) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the Antiskid/Autobrake Control Unit.

(e) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The Antiskid/Autobrake Control Unit display will show BRK A/B1 during the test.

(f) Make sure the AUTOBRAKE DISARM light on the P2-2 panel comes on.

(g) Set the autobrake selector switch on the P2-2 panel to”OFF”.

SUBTASK 32-42-61-860-015

(10) Do the steps that follow for autobrake selector position “2”.

(a) Set the autobrake selector switch on the P2-2 panel to “2”.

(b) Push and hold the ENABLE/VERIFY switch on the Antiskid/Autobrake Control Unit.

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(c) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the Antiskid/Autobrake Control Unit.

(d) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The Antiskid/Autobrake Control Unit display will show BRK A/B2 during the test.

(e) Make sure the AUTOBRAKE DISARM light on the P2-2 panel comes on.

(f) Set the autobrake selector switch on the P2-2 panel to “OFF”.

SUBTASK 32-42-61-860-016

(11) Do the steps that follow for autobrake selector switch “3”.

(a) Set the autobrake selector switch on the P2-2 panel to “3”.

(b) Push an hold the ENABLE/VERIFY switch on the Antiskid/Autobrake Control Unit.

(c) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the Antiskid/Autobrake Control Unit.

(d) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The Antiskid/Autobrake Control Unit display will show BRK A/B3 during the test.

(e) Make sure the AUTOBRAKE DISARM light on the P2-2 panel comes on.

(f) Set the autobrake selector switch on the P2-2 panel to “OFF”.

SUBTASK 32-42-61-860-017

(12) Do the steps that follow for the autobrake selector position “MAX”.

(a) Set the autobrake selector switch on the P2-2 panel to “MAX”.

(b) Push and hold the ENABLE/VERIFY switch on the Antiskid/Autobrake Control Unit.

(c) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the Antiskid/Autobrake Control Unit.

(d) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The Antiskid/Autobrake Control Unit display will show BRK A/B4 during the test.

(e) Make sure the AUTOBRAKE DISARM light on the P2-2 panel comes on.

(f) Set the autobrake selector switch on the P2-2 panel to “OFF”.

SUBTASK 32-42-61-860-018

(13) Do the steps that follow for autobrake selector position “RTO”.

(a) Set the autobrake selector switch on the P2-2 panel to “RTO”.

(b) Push and hold the ENABLE/VERIFY switch on the Antiskid/Autobrake Control Unit.

(c) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the Antiskid/Autobrake Control Unit.

(d) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

NOTE: The Antiskid/Autobrake Control Unit display will show BRK RTO during the test.

(e) Make sure the AUTOBRAKE DISARM light on the P2-2 panel comes on.

(f) Set the autobrake selector switch on the P2-2 panel to “OFF”.

SUBTASK 32-42-61-860-019

(14) Do the steps that follow to test the brake metered pressure switches.

(a) Set the autobrake selector switch on the P2-2 panel to “1”.

(b) Push and hold the left brake pedal to the stop.

(c) Verify that the AUTOBRAKE DISARM light on the P2-2 panel comes on.

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(d) Set the autobrake selector switch on the P2-2 panel to “OFF” and then set it back to “1”.

(e) Push and hold the right brake pedal to the stop.

(f) Verify that the AUTOBRAKE DISARM light on the P2-2 panel comes on.

SUBTASK 32-42-61-860-020

(15) Set the autobrake selector switch on the P2-2 panel to “OFF”.

SUBTASK 32-42-61-860-021

(16) Set the BRAKE TEST selector switch on the Antiskid/Autobrake Control Unit to NORM.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-61-860-022

(1) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-42-61-860-027

(2) Do this task: Air Data Inertial Reference System - Deactivation, TASK 34-21-00-040-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AUTOBRAKE SHUTTLE VALVE - REMOVAL/INSTALLATION

1. General

A. The valve assembly has a shuttle valve and a pressure switch. This procedure contains the tasks that follow:

(1) Autobrake Shuttle Valve Removal

(2) Autobrake Shuttle Valve Installation

(3) Autobrake Shuttle Valve Pressure Switch Removal

(4) Autobrake Shuttle Valve Pressure Switch Installation.

B. There are two autobrake shuttle valves, one for each landing gear, located on the aft wall of the main landing gear wheel well.

C. This procedure is applicable for the two shuttle valves.

TASK 32-42-71-000-801

2. Autobrake Shuttle Valve Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Removal

SUBTASK 32-42-71-480-009

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-71-860-001

(2) To remove pressure from the normal (system B) hydraulic system, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-42-71-480-002

(3) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-71-860-002

(4) Release the parking brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-71-840-001

(5) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: You will have to operate the brake pedals approximately 12 times to fully release the pressure from the accumulator.

SUBTASK 32-42-71-860-005

(6) Set the parking brake.

SUBTASK 32-42-71-860-003

(7) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Autobrake Shuttle Valve Removal

SUBTASK 32-42-71-020-001

(1) Disconnect the electrical connector [1] from the pressure switch [2] on the autobrake shuttle valve [3].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

SUBTASK 32-42-71-020-002

(2) Disconnect the hydraulic lines from the left autobrake shuttle valve [3].

(a) Disconnect the hydraulic line [4] from the union [5].

(b) Disconnect the hydraulic line [9] from the union [5].

(c) Disconnect the hydraulic line [7] and hydraulic line [13] from the tee coupling [18].

SUBTASK 32-42-71-020-008

(3) Disconnect the hydraulic lines from the right autobrake shuttle valve [3].

(a) Disconnect the hydraulic line [17] from the union [5].

(b) Disconnect the hydraulic line [15] and hydraulic line [16] from the tee coupling [18].

(c) Disconnect the hydraulic line [14] and hydraulic line [19] from the tee coupling [20].

LOM 422-434, 437-447, 450-999

SUBTASK 32-42-71-020-009

(4) Disconnect the hydraulic lines from the left autobrake shuttle valve [3].

(a) Disconnect the hydraulic line [4] from the union [5].

(b) Disconnect the hydraulic line [9] from the union [5].

(c) Disconnect the tee coupling [21] with the hydraulic line [7] and hydraulic line [13] from the union [5].

SUBTASK 32-42-71-020-010

(5) Disconnect the hydraulic lines from the right autobrake shuttle valve [3].

(a) Disconnect the hydraulic line [17] from the union [5].

(b) Disconnect the tee coupling [18] with the hydraulic line [15] and hydraulic line [16] from the union [5].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Disconnect the tee coupling [20] with the hydraulic line [14] and hydraulic line [19] from the union [5].

LOM ALL

SUBTASK 32-42-71-480-003

(6) Install plugs in the hydraulic lines.

SUBTASK 32-42-71-020-003

(7) Remove the bolts [11] and washers [10] which hold the autobrake shuttle valve [3] to the airplane.

SUBTASK 32-42-71-020-004

(8) If the replacement autobrake shuttle valve [3] does not have hydraulic fittings installed, do these steps:

(a) Remove the hydraulic unions [5] and packings [6].

(b) Discard the packings [6].

SUBTASK 32-42-71-480-004

(9) Install plugs in the ports of the autobrake shuttle valve [3].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE)
(EXAMPLE)

G14922 S0006575587_V3

Autobrake Shuttle Valve Installation
Figure 401/32-42-71-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Autobrake Shuttle Valve Installation
Figure 401/32-42-71-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Autobrake Shuttle Valve Installation
Figure 401/32-42-71-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-71-400-801

3. **Autobrake Shuttle Valve Installation**

(Figure 401)

A. **References**

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
32-41-00-870-801	Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves (P/B 201)
32-42-00-400-802	Autobrake Shuttle Valve Operational Test (P/B 501)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. **Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Autobrake shuttle valve	32-42-71-01-030	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-42-71-02-015	LOM 422-434, 437-447, 450-999
6	Packing	32-42-71-01-025	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-42-71-02-010	LOM 422-434, 437-447, 450-999

D. **Location Zones**

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

E. **Autobrake Shuttle Valve Installation**

SUBTASK 32-42-71-080-001

(1) Remove the plugs from the ports of the autobrake shuttle valve [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-71-420-001

(2) If the replacement autobrake shuttle valve [3] does not have hydraulic fittings installed, do these steps:

(a) Lubricate the hydraulic unions [5] and new packings [6] for the autobrake shuttle valve [3] with hydraulic fluid, D00153.

(b) Install the new packings [6] on the hydraulic unions [5].

(c) Install the unions [5] in the three hydraulic ports in the autobrake shuttle valve [3].

SUBTASK 32-42-71-100-001

(3) Do the steps below to help get a good electrical bond between the autobrake shuttle valve [3] and valve bracket [8]:

(a) To fully clean the mating surface of the valve bracket [8] and autobrake shuttle valve [3], do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

(b) Manually apply coating, C00064, to all of the cleaned areas of the valve bracket [8].

(c) Fay surface seal the autobrake shuttle valve [3] to the valve bracket [8] with sealant, A00247.

SUBTASK 32-42-71-420-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(4) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the bolts [11] and washers [10] that hold the autobrake shuttle valve [3] to the valve bracket [8].

SUBTASK 32-42-71-420-004

(5) Install the bolts [11] and washers [10] to hold the autobrake shuttle valve [3] to the airplane.

SUBTASK 32-42-71-080-002

(6) Remove the plugs from the hydraulic lines.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

SUBTASK 32-42-71-420-011

(7) Connect the hydraulic lines to the left autobrake shuttle valve [3].

(a) Connect the hydraulic line [4] to the union [5].

1) Tighten the B-nut on the hydraulic line [4] to 270 ±14 in-lb (30.5 ±1.6 N·m).

(b) Connect the hydraulic line [9] to the union [5].

1) Tighten the B-nut on the hydraulic line [9] to 270 ±14 in-lb (30.5 ±1.6 N·m).

(c) Connect the hydraulic line [7] and hydraulic line [13] to the tee coupling [18].

1) Tighten the B-nut on the hydraulic line [7] to 270 ±14 in-lb (30.5 ±1.6 N·m).

2) Tighten the B-nut on the hydraulic line [13] to 140 ±7 in-lb (15.8 ±0.8 N·m).

SUBTASK 32-42-71-420-005

(8) Connect the hydraulic lines to the right autobrake shuttle valve [3].

(a) Connect the hydraulic line [17] to the union [5].

1) Tighten the B-nut on the hydraulic line [17] to 270 ±14 in-lb (30.5 ±1.6 N·m).

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LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 (Continued)

(b) Connect the hydraulic line [15] and hydraulic line [16] to the tee coupling [18].
  1) Tighten the B-nut on the hydraulic line [16] to 270 ±14 in-lb (30.5 ±1.6 N·m).
  2) Tighten the B-nut on the hydraulic line [15] to 140 ±7 in-lb (15.8 ±0.8 N·m).

(c) Connect the hydraulic line [19] and hydraulic line [14] to the tee coupling [20].
  1) Tighten the B-nut on the hydraulic line [19] to 270 ±14 in-lb (30.5 ±1.6 N·m).
  2) Tighten the B-nut on the hydraulic line [14] to 270 ±14 in-lb (30.5 ±1.6 N·m).

LOM 422-434, 437-447, 450-999

SUBTASK 32-42-71-420-012

(9) Connect the hydraulic lines to the left autobrake shuttle valve [3].
  (a) Connect the hydraulic line [4] to the union [5].
    1) Tighten the B-nut on hydraulic line [4] to the 270 ±14 in-lb (30.5 ±1.6 N·m).
  (b) Connect the hydraulic line [9] to the union [5].
    1) Tighten the B-nut on hydraulic line [9] to the 270 ±14 in-lb (30.5 ±1.6 N·m).
  (c) Connect the tee coupling [21] with the hydraulic line [7] and hydraulic line [13] to the union [5].
    1) Tighten the B-nut on tee coupling [21] to the 270 ±14 in-lb (30.5 ±1.6 N·m).

SUBTASK 32-42-71-420-013

(10) Connect the hydraulic lines to the right autobrake shuttle valve [3].
  (a) Connect the hydraulic line [17] to the union [5].
    1) Tighten the B-nut on the hydraulic line [17] to the 270 ±14 in-lb (30.5 ±1.6 N·m).
  (b) Connect the tee coupling [18] with the hydraulic line [15] and hydraulic line [16] to the union [5].
    1) Tighten the B-nut on the tee coupling [18] to the 270 ±14 in-lb (30.5 ±1.6 N·m).
  (c) Connect the tee coupling [20] with the hydraulic line [19] and hydraulic line [14] to the union [5].
    1) Tighten the B-nut on the tee coupling [20] to the 270 ±14 in-lb (30.5 ±1.6 N·m).

LOM ALL

SUBTASK 32-42-71-420-006

(11) Before you connect the electrical connector [1] to the autobrake shuttle valve [3], examine the connector for corrosion.

WARNING	DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

  (a) If there was corrosion, correct the problem (SWPM 20-60-03).
  (b) Apply D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-71-420-014

(12) Connect the electrical connector [1] to the autobrake shuttle valve [3].

SUBTASK 32-42-71-860-004

(13) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-71-710-001

(14) For the normal brake system, do this task: Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves, TASK 32-41-00-870-801.

SUBTASK 32-42-71-710-002

(15) Do this task: Autobrake Shuttle Valve Operational Test, TASK 32-42-00-400-802.

END OF TASK

TASK 32-42-71-000-802

4. Autobrake Shuttle Valve Pressure Switch Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Removal

SUBTASK 32-42-71-480-007

WARNING MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-71-860-007

(2) Remove pressure from the normal (system B) hydraulic system, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-42-71-480-008

(3) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-71-860-008

(4) Release the parking brake.

SUBTASK 32-42-71-840-002

(5) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: You will have to operate the brake pedals approximately 12 times to fully release the pressure from the accumulator.

SUBTASK 32-42-71-860-009

(6) Set the parking brake.

SUBTASK 32-42-71-860-010

(7) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Autobrake Shuttle Valve Pressure Switch Removal

SUBTASK 32-42-71-020-006

(1) Disconnect the electrical connector [1] from the pressure switch [2] on the autobrake shuttle valve [3].

SUBTASK 32-42-71-020-007

(2) Do the steps that follow to remove the pressure switch [2] from the autobrake shuttle valve [3]:

(a) Remove the lockwire from the pressure switch [2].

(b) Remove the pressure switch [2] from the autobrake shuttle valve [3].

(c) Remove the packing [12] from the pressure switch [2].

(d) Discard the packing [12].

SUBTASK 32-42-71-480-005

(3) Install plugs in the ports of the autobrake shuttle valve [3].

END OF TASK

TASK 32-42-71-400-802

5. Autobrake Shuttle Valve Pressure Switch Installation

(Figure 401)

A. References

Reference	Title
32-42-00-400-802	Autobrake Shuttle Valve Operational Test (P/B 501)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description	Specification
G01912	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Pressure switch	32-42-71-01-080	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-42-71-02-065	LOM 422-434, 437-447, 450-999
12	Packing	32-42-71-01-075	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-42-71-02-060	LOM 422-434, 437-447, 450-999

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

E. Autobrake Shuttle Valve Pressure Switch Installation

SUBTASK 32-42-71-080-003

(1) Remove the plugs from the ports of the autobrake shuttle valve [3].

SUBTASK 32-42-71-480-006

(2) Do the steps that follow to install the pressure switch [2] on the autobrake shuttle valve [3]:

(a) Lubricate the threads of the pressure switch [2] and the new packing [12] with hydraulic fluid, D00153.

(b) Install the packing [12] on the pressure switch [2].

(c) Install the pressure switch [2] on the autobrake shuttle valve [3].

1) Tighten the pressure switch [2] to 170 in-lb (19 N·m).

(d) Install MS20995NC32 lockwire, G01912, on the pressure switch [2] to secure to the autobrake shuttle valve [3].

SUBTASK 32-42-71-420-007

WARNING

DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(3) Before you connect the electrical connector [1] to the autobrake shuttle valve [3], examine the connector for corrosion.

(a) If there was corrosion, correct the problem (SWPM 20-60-03).

(b) Apply the D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-71-420-008

(4) Connect the electrical connector [1] to the pressure switch [2] on the autobrake shuttle valve [3].

SUBTASK 32-42-71-860-006

(5) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-71-710-003

(6) Do this task: Autobrake Shuttle Valve Operational Test, TASK 32-42-00-400-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AUTOBRAKE PRESSURE CONTROL MODULE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the autobrake pressure control module

(2) An installation of the autobrake pressure control module

(3) A removal of the autobrake pressure control module line replaceable units (the servo valve assembly, solenoid valve assembly, pressure switches, and filter).

(4) An installation of the autobrake pressure control module line replaceable units (the servo valve assembly, solenoid valve assembly, pressure switches, and filter).

B. The autobrake pressure control module is on the ceiling of the main landing gear wheel well.

TASK 32-42-81-000-801

2. Autobrake Pressure Control Module Removal

(Figure 401)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

Reference	Description
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Prepare for the Removal

SUBTASK 32-42-81-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-81-480-002

(2) Make sure that the tires have chocks installed around them, do one of these tasks:

- Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801
- Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-81-860-002

(3) Release the parking brake.

SUBTASK 32-42-81-840-001

(4) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: You will have to fully depress, hold for 2 seconds, and release the brake pedals approximately 14 times to completely release the pressure from the accumulator. This will prevent high-pressure fluid spray when replacing components within the hydraulic brake system.

SUBTASK 32-42-81-860-011

(5) Remove pressure from the normal (system B) and alternate (system A) hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-42-81-860-009

(6) Set the parking brake.

SUBTASK 32-42-81-860-003

(7) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

E. Autobrake Pressure Control Module Removal

SUBTASK 32-42-81-020-001

(1) Disconnect the hydraulic line (brake port) [2], hydraulic line (return port) [9], and hydraulic line (pressure port) [11] from the autobrake pressure control module [20].

SUBTASK 32-42-81-480-003

(2) Install the caps/plugs, STD-14686, in the hydraulic line (brake port) [2], hydraulic line (return port) [9], hydraulic line (pressure port) [11], on the unions [13] and union [18].

SUBTASK 32-42-81-020-002

(3) Disconnect the electrical connector [1], electrical connector [6], electrical connector [7], and electrical connector [8] from the autobrake pressure control module [20].

SUBTASK 32-42-81-020-003

(4) Remove the bolts [3] and washers [4] that hold the autobrake pressure control module [20] to the airplane.

SUBTASK 32-42-81-020-004

(5) If the replacement autobrake pressure control module [20] does not have hydraulic fittings removed, do these steps:

(a) Remove the unions [13], union [18], and packings [14].

1) Discard the packings [14].

SUBTASK 32-42-81-480-004

(6) Install the caps/plugs, STD-14686, in the hydraulic ports of the autobrake pressure control module [20].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Autobrake Pressure Control Module Installation
Figure 401/32-42-81-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G18738 S0006575594_V3

Autobrake Pressure Control Module Installation
Figure 401/32-42-81-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Autobrake Pressure Control Module Installation
Figure 401/32-42-81-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G19226 S0006575596_V5

Autobrake Pressure Control Module Installation
Figure 401/32-42-81-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Autobrake Pressure Control Module Installation
Figure 401/32-42-81-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-42-81-400-801

3. **Autobrake Pressure Control Module Installation**

(Figure 401)

A. **References**

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
32-41-00-870-801	Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves (P/B 201)
32-42-00-720-801	Antiskid/Autobrake Control Unit Operational Test (P/B 501)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES
SWPM 20-20-00, Section 14E	Standard Wiring Practices Manual
SWPM 20-60-03	Special Protection of Electrical Connectors

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

C. **Consumable Materials**

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
13	Union	32-43-51-02-020	LOM ALL
14	Packing	32-43-51-02-030	LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
18	Union	32-43-51-02-025	LOM ALL
20	Autobrake pressure control module	32-43-51-02-035	LOM ALL
		32-43-51-02-150	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

F. Autobrake Pressure Control Module Installation

SUBTASK 32-42-81-080-001

(1) Remove the caps/plugs, STD-14686, from the ports of the autobrake pressure control module [20].

SUBTASK 32-42-81-420-001

(2) If the replacement autobrake pressure control module [20] does not have hydraulic fittings installed, do these steps:

(a) Lubricate the unions [13], union [18], and packings [14] for the autobrake pressure control module [20] with hydraulic fluid, D00153.

(b) Install the packings [14] on the unions [13] and union [18].

(c) Install the unions [13] and union [18] in the autobrake pressure control module [20].

1) Tighten the unions [13] and union [18] to 360 ±18 in-lb (40.7 ±2.0 N·m).

SUBTASK 32-42-81-100-001

(3) To help get a good electrical bond between the autobrake pressure control module [20] and module bracket, do these steps:

(a) To fully clean the mating surface of the bracket and autobrake pressure control module [20], do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

(b) Manually apply coating, C00064, to all of the cleaned areas of the bracket.

LOM ALL; AIRPLANES WITH PARKER HANNIFIN CORP AUTOBRAKE CONTROL MODULE P/N 78169, -01, -02, -03, -04

(c) Fay surface seal the valve assembly to the bracket with sealant, A02315.

LOM ALL

SUBTASK 32-42-81-420-002

(4) Install the autobrake pressure control module [20].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the bolts [3] and washers [4] that hold the autobrake pressure control module [20] to the bracket.

(b) Install the bolts [3] and washers [4] to hold the autobrake pressure control module [20] to the bracket.

(c) Measure the electrical bonding resistance between the autobrake pressure control module [20] and bracket (SWPM 20-20-00).

1) Use an intrinsically safe approved bonding meter, COM-1550.

2) Make sure that the resistance is not more than 0.0025 ohms (2.5 milliohms).

(d) Remove the caps/plugs, STD-14686, from the hydraulic line (brake port) [2], hydraulic line (return port) [9], and hydraulic line (pressure port) [11].

(e) Connect the hydraulic lines to the unions [13] and union [18] on the autobrake pressure control module [20].

1) Tighten the B-nuts on the hydraulic line (brake port) [2], hydraulic line (return port) [9], and hydraulic line (pressure port) [11] to 170 ±9 in-lb (19.2 ±1.0 N·m).

(f) Examine the electrical connector [1], electrical connector [6], electrical connector [7], and electrical connector [8] for corrosion.

WARNING

DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

1) If there is corrosion, correct the problem (SWPM 20-60-03).

2) Apply D5026NS or ZC-026 compound, G50171, to the electrical connector [1], electrical connector [6], electrical connector [7], and electrical connector [8] (SWPM 20-60-03).

(g) Connect the electrical connector [1], electrical connector [6], electrical connector [7], and electrical connector [8] to the autobrake pressure control module [20].

SUBTASK 32-42-81-390-001

(5) Apply a fillet seal with sealant, A02315, around the mounting points between the autobrake pressure control module [20] and bracket (SWPM 20-20-00, Section 14E).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Autobrake Pressure Control Module Installation Test

SUBTASK 32-42-81-860-012

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-81-710-005

(2) Do this task: Antiskid/Autobrake Control Unit Operational Test, TASK 32-42-00-720-801.

SUBTASK 32-42-81-870-001

(3) Do this task: Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves, TASK 32-41-00-870-801.

END OF TASK

TASK 32-42-81-000-802

4. Autobrake Pressure Control Module Line Replaceable Units Removal

(Figure 401)

A. General

(1) This procedure has the removal of these components of the autobrake pressure control module [20]:

(a) solenoid valve assembly [12]

(b) servo valve assembly [10]

(c) pressure switch [5]

LOM ALL; AIRPLANES WITH PARKER HANNIFIN CORP AUTOBRAKE CONTROL MODULE P/N 78169, -01, -02, -03, -04

(d) filter [32].

LOM ALL

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

Reference	Description
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Removal

SUBTASK 32-42-81-480-005

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-42-81-860-005

(2) To remove pressure from the normal (system B) and the alternate (system A) hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-42-81-480-006

(3) Make sure that the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-42-81-860-006

(4) Release the parking brake.

SUBTASK 32-42-81-840-002

(5) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

NOTE: You will have to operate the brake pedals approximately 12 times to fully release the pressure from the accumulator.

SUBTASK 32-42-81-860-010

(6) Set the parking brake.

SUBTASK 32-42-81-860-007

(7) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-81-020-021

(8) Remove the lockwire from the applicable Line Replaceable Unit.

F. Solenoid Valve Removal

SUBTASK 32-42-81-020-005

(1) Remove the screws [25] and washers [26] that connect the solenoid valve assembly [12] to the autobrake pressure control module [20].

SUBTASK 32-42-81-480-007

> **CAUTION** WHEN YOU REMOVE THE SOLENOID VALVE FROM THE MODULE, MAKE SURE THE VALVE IS KEPT IN A VERTICAL POSITION. IF THE VALVE IS NOT KEPT IN A VERTICAL POSITION, DAMAGE TO THE CONNECTOR PINS CAN OCCUR.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(CAUTION PRECEDES)

> **CAUTION** WHEN YOU REMOVE THE SOLENOID VALVE AND THE GASKET, MAKE SURE THAT CONTAMINATION CAN NOT GO INTO THE MODULE'S OPEN PORTS. DAMAGE TO THE VALVE CAN OCCUR IF LET CONTAMINATION GO INTO THE PORTS.

(2) Remove the solenoid valve assembly [12] from the autobrake pressure control module [20].

SUBTASK 32-42-81-480-008

(3) Remove the packing [24] from the solenoid valve assembly [12].

(a) Discard the packing [24].

SUBTASK 32-42-81-020-006

(4) Remove the gasket [27] from the autobrake pressure control module [20].

SUBTASK 32-42-81-480-009

(5) Install the cap/plug, STD-14686, in the port of the solenoid valve assembly [12].

G. Servo Valve Removal

SUBTASK 32-42-81-020-007

(1) Disconnect the electrical connector [7] from the servo valve assembly [10].

SUBTASK 32-42-81-020-008

(2) Remove the screws [22] and washers [23] (if applicable) that connect the servo valve assembly [10] to the autobrake pressure control module [20].

SUBTASK 32-42-81-480-010

> **CAUTION** MAKE SURE THAT CONTAMINATION CAN NOT GO INTO THE MODULE'S OPEN PORTS WHEN YOU REMOVE THE SERVO VALVE AND GASKET. DAMAGE TO THE VALVE CAN OCCUR IF YOU LET CONTAMINATION GO INTO THE PORTS.

(3) Remove the servo valve assembly [10] from the autobrake pressure control module [20].

SUBTASK 32-42-81-020-009

(4) Remove the gasket [21].

SUBTASK 32-42-81-480-011

(5) Install the caps/plugs, STD-14686, in the ports of the servo valve assembly [10].

H. Pressure Switch Removal

NOTE: These steps apply to the pressure switch of the solenoid valve and the pressure switch of the servo valve.

SUBTASK 32-42-81-020-010

(1) Disconnect the electrical connector [1] or electrical connector [6] from the pressure switch [5].

SUBTASK 32-42-81-480-012

(2) Remove the pressure switch [5] from the autobrake pressure control module [20].

SUBTASK 32-42-81-480-013

(3) Remove the packing [16], packing [17] (if applicable), and retainers [15] from the pressure switch [5].

(a) Discard the packing [16] and packing [17] (if applicable).

SUBTASK 32-42-81-480-014

(4) Install the cap/plug, STD-14686, in the port of the pressure switch [5].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH PARKER HANNIFIN CORP AUTOBRAKE CONTROL MODULE P/N 78169, -01, -02, -03, -04

I. Filter Removal

SUBTASK 32-42-81-020-011

(1) Remove the filter bowl [28] from the autobrake pressure control module [20].

SUBTASK 32-42-81-020-017

(2) Remove the retainers [33] and packing [34] from the filter bowl [28].

(a) Discard the packing [34].

SUBTASK 32-42-81-020-018

(3) Remove the filter [32] from the autobrake pressure control module [20].

SUBTASK 32-42-81-020-019

(4) Remove the retainers [30] and packing [31] from the filter [32].

(a) Discard the packing [31].

SUBTASK 32-42-81-480-023

(5) Install the cap/plug, STD-14686, in the port of the filter bowl [28].

LOM ALL

——— END OF TASK ———

TASK 32-42-81-400-802

5. Autobrake Pressure Control Module Line Replaceable Units Installation

(Figure 401)

A. General

(1) The procedure that follows installs these components of the autobrake pressure control module [20]:

(a) solenoid valve assembly [12]

(b) servo valve assembly [10]

(c) pressure switch [5]

LOM ALL; AIRPLANES WITH PARKER HANNIFIN CORP AUTOBRAKE CONTROL MODULE P/N 78169, -01, -02, -03, -04

(d) filter [32].

LOM ALL

B. References

Reference	Title
32-42-00-720-801	Antiskid/Autobrake Control Unit Operational Test (P/B 501)
SWPM 20-60-03	Special Protection of Electrical Connectors

C. Tools/Equipment

Reference	Description
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Pressure switch	32-43-51-02-040	LOM ALL
		32-43-51-02-205	LOM ALL
10	Servo valve assembly	32-43-51-02-110	LOM ALL
		32-43-51-02-115	LOM ALL
		32-43-51-02-280	LOM ALL
12	Solenoid valve assembly	32-43-51-02-080	LOM ALL
		32-43-51-02-230	LOM ALL
16	Packing	32-43-51-02-052	LOM ALL
		32-43-51-02-210	LOM ALL
17	Packing	32-43-51-02-046	LOM ALL
21	Gasket	32-43-51-02-095	LOM ALL
		32-43-51-02-285	LOM ALL
24	Packing	32-43-51-02-070	LOM ALL
		32-43-51-02-235	LOM ALL
27	Gasket	32-43-51-02-075	LOM ALL
		32-43-51-02-240	LOM ALL
31	Packing	32-43-51-02-265	LOM ALL
32	Filter	32-43-51-02-260	LOM ALL
34	Packing	32-43-51-02-250	LOM ALL

F. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

G. Solenoid Valve Installation

SUBTASK 32-42-81-420-006

(1) Install the packing [24] on the solenoid valve assembly [12].

SUBTASK 32-42-81-480-018

(2) Remove the cap/plug, STD-14686, from the port of the solenoid valve assembly [12].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-81-480-019

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(3) Apply Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (optional) to the screws [25].

SUBTASK 32-42-81-020-012

(4) Install the solenoid valve gasket [27] on the autobrake pressure control module [20].

SUBTASK 32-42-81-020-013

(5) Put the solenoid valve assembly [12] in its position on the autobrake pressure control module [20].

SUBTASK 32-42-81-420-007

(6) Install the screws [25] and washers [26] to connect the solenoid valve assembly [12] to the autobrake pressure control module [20].

(a) Tighten the screws [25] to 75 in-lb (8.47 N·m) - 80 in-lb (9.04 N·m) in a crisscross sequence.

1) Starting with the screw [25] closest to the nearest mounting bolt [3] for the autobrake pressure control module [20], tighten all bolts to 5 in-lb (0.56 N·m) - 10 in-lb (1.13 N·m), then to 35 in-lb (3.95 N·m) - 40 in-lb (4.52 N·m), and then to the final torque.

SUBTASK 32-42-81-420-009

(7) Use a 0.0015 in. (0.0381 mm) shim stock to examine the gasket [27] for gaps.

(a) No gaps more than 0.0015 in. (0.0381 mm) are permitted.

NOTE: This applies to gaps on either side of the gasket. There must be no gap in excess of 0.0015 in. (0.0381 mm) between the solenoid valve and the gasket and between the valve module and the gasket.

H. Servo Valve Installation

SUBTASK 32-42-81-480-020

(1) Remove the caps/plugs, STD-14686, from the ports of the servo valve assembly [10].

SUBTASK 32-42-81-480-021

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(2) Apply Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (optional) to the screws [22].

SUBTASK 32-42-81-020-014

(3) Install the servo valve gasket [21] on the autobrake pressure control module [20].

SUBTASK 32-42-81-020-015

(4) Put the servo valve assembly [10] in its position on the autobrake pressure control module [20].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-81-420-010

(5) Install the screws [22] and washers [23] (if applicable) to connect the servo valve assembly [10] to the autobrake pressure control module [20].

(a) Tighten the screws [22] to 75 in-lb (8.47 N·m) - 80 in-lb (9.04 N·m) in a crisscross sequence.

1) Starting with the screw [22] closest to the solenoid valve assembly [12], tighten all screws [22] to 5 in-lb (0.56 N·m) - 10 in-lb (1.13 N·m), then to 35 in-lb (3.95 N·m) - 40 in-lb (4.52 N·m), and then to the final torque.

SUBTASK 32-42-81-420-012

(6) Use a 0.0015 in. (0.0381 mm) shim stock to examine the gasket [21] for gaps.

(a) No gaps more than 0.0015 in. (0.0381 mm) are permitted.

NOTE: This applies to gaps on either side of the gasket. There must be no gap in excess of 0.0015 in. (0.0381 mm) between the servo valve and the gasket and between the valve module and the gasket.

SUBTASK 32-42-81-020-016

(7) Examine the electrical connector [7] for corrosion.

WARNING	DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, refer to SWPM 20-60-03 to correct the problem.

(b) Apply theD5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

SUBTASK 32-42-81-420-023

(8) Connect the electrical connector [7] to the servo valve assembly [10].

I. Pressure Switch Installation

NOTE: These steps apply to the pressure switch of the solenoid valve and the pressure switch of the servo valve.

SUBTASK 32-42-81-420-013

(1) Lubricate the packing [16], packing [17] (if applicable), and retainers [15] with hydraulic fluid, D00153.

LOM ALL; AIRPLANES WITH WOODWARD HRT AUTOBRAKE CONTROL MODULE P/N 20102060-101, -102, -103

SUBTASK 32-42-81-420-014

(2) Install the packing [17] in the middle groove of the pressure switch [5].

LOM ALL

SUBTASK 32-42-81-420-015

(3) Install a retainer [15], packing [16], and retainer [15] in the end groove of the pressure switch [5].

SUBTASK 32-42-81-480-024

(4) Remove the cap/plug, STD-14686, from the port of the pressure switch [5].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-42-81-480-022

(5) Install the pressure switch [5] on the autobrake pressure control module [20].

(a) Make sure that you verify the type of pressure switch installed on the control module.

NOTE: Pressure switch units are interchangeable.

(b) For Parker Hannifin Corp (P/N 78169 series) pressure switch, tighten the pressure switch [5] to 90 in-lb (10.2 N·m) - 110 in-lb (12.4 N·m).

(c) For Woodward HRT (P/N 20102060 series) pressure switch, tighten the pressure switch [5] to 342 in-lb (38.64 N·m) - 378 in-lb (42.71 N·m).

(d) For Custom Control Sensors, Inc (P/N 90G237 series) pressure switch, tighten the pressure switch [5] to 145 in-lb (16.4 N·m) - 155 in-lb (17.5 N·m).

SUBTASK 32-42-81-420-017

(6) Examine the electrical connector [1] or electrical connector [6] for corrosion.

WARNING	DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, refer to SWPM 20-60-03 to correct the problem.

(b) Apply the D5026NS or ZC-026 compound, G50171, to the electrical connector [1] or electrical connector [6] (SWPM 20-60-03).

SUBTASK 32-42-81-420-024

(7) Connect the electrical connector [1] or electrical connector [6] to the applicable pressure switch [5].

LOM ALL; AIRPLANES WITH PARKER HANNIFIN CORP AUTOBRAKE CONTROL MODULE P/N 78169, -01, -02, -03, -04

J. Filter Installation

SUBTASK 32-42-81-420-018

(1) Lubricate the packing [31], packing [34], retainers [30], and retainers [33] for the filter [32] and filter bowl [28] with hydraulic fluid, D00153.

SUBTASK 32-42-81-420-019

(2) Install the packing [31] and retainers [30] on the filter [32].

SUBTASK 32-42-81-480-025

(3) Remove the cap/plug, STD-14686, from the port of the filter bowl [28].

SUBTASK 32-42-81-420-020

(4) Install the filter [32] in the autobrake pressure control module [20].

(a) Carefully push the filter [32] down into the bore.

SUBTASK 32-42-81-420-021

(5) Install the packing [34] and retainers [33] on the filter bowl [28].

SUBTASK 32-42-81-420-022

(6) Install the filter bowl [28] in the autobrake pressure control module [20].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Tighten the filter bowl [28] to 240 in-lb (27.1 N·m) - 360 in-lb (40.7 N·m).

LOM ALL

K. Put the Airplane Back to Its Usual Condition

SUBTASK 32-42-81-420-025

(1) If necessary, safety screws [22], screws [25], pressure switches [5], and filter bowl [28] (if applicable) with lockwire.

SUBTASK 32-42-81-860-008

(2) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

SUBTASK 32-42-81-710-004

(3) Do this task: Antiskid/Autobrake Control Unit Operational Test, TASK 32-42-00-720-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PARKING BRAKE SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) An adjustment of the parking brake system

(2) An operational test of the parking brake system

(3) A parking brake hold check.

TASK 32-44-00-820-801

2. Parking Brake System Adjustment

(Figure 501, Figure 502)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Prepare for the Adjustment

SUBTASK 32-44-00-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-44-00-860-001

(2) Open this access panel:

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-44-00-860-002

(3) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-44-00-480-002

(4) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-44-00-860-003

(5) Release the parking brake.

F. Parking Brake System - Adjustment

SUBTASK 32-44-00-820-005

(1) Adjust the pawls [11] of the parking brake (Figure 501):

(a) Push the two brake pedals fully to the pedal steps, and hold them in position.

(b) Extend the pawls [11] one turn at a time until the parking brake can not be set.

(c) Retract the pawls [11] 1 to 2 turns to set adjustment or until you get a clearance of 0.04 in. (1.0 mm) - 0.10 in. (2.5 mm) between the pawl [11] and bushing [12].

(d) Make sure that the parking brake can be set from the captain's and first officer's seat.

(e) If necessary, adjust the pawls [11] (retract one turn at a time) until the parking brake can be set from the captain's or first officer's seat.

NOTE: The more the pawls are retracted, the larger the parking brake bleed-down rate will be.

(f) Lock the adjustment.

(g) Release the brake pedals.

SUBTASK 32-44-00-820-002

(2) Adjust the pawl stop (Figure 501):

(a) Turn the bellcranks [13] until the bushings [12] are at their closest point to the aft edge of the pawls [11].

(b) Adjust the pawl stop until the clearance between the aft edge of the pawls [11] and the bushings [12] is 0.16 in. (4.1 mm) – 0.20 in. (5.1 mm):

1) Remove the nut [7] from the pawl stop assembly.

2) Remove the bumper [4], screw [5], and washer [6] from the pawl stop bracket [8].

3) Add or remove washers [6] until you get the correct clearance.

4) Install the bumper [4], screw [5], and washer [6] on the pawl stop bracket [8].

5) Install the nut [7] on the pawl stop assembly.

(c) Release the bellcrank [13].

SUBTASK 32-44-00-820-003

(3) Adjust the parking brake lever [42] (Figure 501, Figure 502):

(a) Install a rig pin LGB2, from rigging pin kit, SPL-1585, through the jackshaft rig pin hole [15] and switch support bracket [18].

(b) Install rig pin LGB1, from rigging pin kit, SPL-1585, through the brake control bell cranks [3] rig pin hole and the left beam structure rig pin hole [49].

(c) Remove the cotter pin [47], washer [46], and the pin [45] from the parking brake lever [42] and the rod [44].

(d) Loosen the jamnut [48] on the bottom of the rod [44].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(e) Adjust the length of the rod [44] until the stop surface of the parking brake lever [42] is against the top of the control stand when the pin [45] is installed.

NOTE: If the parking brake rod is adjusted with this method, the rod itself must be turned in full 360 degree turns. The rod assembly is orientation sensitive.

(f) Tighten the jamnut [48] on the rod [44].

(g) Install the pin [45], washer [46], and the cotter pin [47] to hold the parking brake lever [42] to the rod [44].

(h) Make sure that the parking brake lever [42] moves smoothly.

(i) Remove the rig pin from rigging pin kit, SPL-1585, the jackshaft rig pin hole [15] and the switch support bracket [18].

(j) Remove the rig pin LGB1 from rigging pin kit, SPL-1585, the left beam structure rig pin hole [49] and the hole on the brake control bell cranks [3] rig pin hole.

SUBTASK 32-44-00-820-004

(4) Adjust the parking brake latch switch [17] (Figure 501, Figure 502):

(a) Make sure that the rudder pedals are released.

(b) Pull the parking brake lever [42] on the control stand, until it stops, and hold it in this position.

(c) Make sure that the switch actuator [16] lightly contacts the rod end.

(d) Make sure that the parking brake light [43], next to the parking brake lever [42], does not turn on.

(e) If the switch [17] does not operate in the correct range, do these steps:

1) Loosen the screws [19] and the nuts [20] that hold the switch actuator [16] and the switch [17] to the structure.

2) Turn the switch actuator [16] so that the switch actuator lightly touches the rod end and the parking brake light [43], next to the parking brake lever [42], does not turn on.

(f) Push the two rudder pedals and set the parking brake.

(g) Make sure that the parking brake light [43] next to the parking brake lever [42] turns on.

NOTE: The parking brake light should turn on between 35 and 45 degrees of parking brake lever travel from the released position.

(h) Release the parking brake.

(i) Make sure that parking brake light [43] goes off.

(j) Make sure that the parking brake lever [42] returns to its usual position without assistance.

(k) Set the parking brake.

SUBTASK 32-44-00-860-004

(5) Close this access panel:

Number	Name/Location
112A	Forward Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G22541 S0006575605_V2

Parking Brake System Adjustment
Figure 501/32-44-00-990-801 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RIG PIN HOLE LOCATION

B

G22544 S0006575606_V3

Parking Brake System Adjustment
Figure 501/32-44-00-990-801 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G22546 S0006575607_V2

Parking Brake System Adjustment
Figure 501/32-44-00-990-801 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PAWL ADJUSTMENT
(PEDALS AGAINST THE STOP POSITION)

A-A

G22553 S0006575608_V2

Parking Brake System Adjustment
Figure 501/32-44-00-990-801 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PAWL ADJUSTMENT
(BELLCRANK TURNED SLIGHTLY)

A-A

FWD

G22556 S0006575609_V2

Parking Brake System Adjustment
Figure 501/32-44-00-990-801 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SWITCH ADJUSTMENT

D

G22558 S0006575610_V2

Parking Brake System Adjustment
Figure 501/32-44-00-990-801 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Parking Brake Lever Adjustment
Figure 502/32-44-00-990-802 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Parking Brake Lever Adjustment
Figure 502/32-44-00-990-802 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

CONTROL STAND

3044901 S0000811690_V1

Parking Brake Lever Adjustment
Figure 502/32-44-00-990-802 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Parking Brake Lever Adjustment
Figure 502/32-44-00-990-802 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-44-00-710-801

3. Parking Brake System - Operational Test

(Figure 501, Figure 502)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
211	Flight Compartment - Left
212	Flight Compartment - Right
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Test

SUBTASK 32-44-00-480-003

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-44-00-480-004

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-44-00-860-005

(3) For the system A and system B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-44-00-480-005

(4) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-44-00-860-006

(5) Release the parking brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-44-00-840-001

(6) Fully push the brake pedals 12 times to remove hydraulic pressure from the brake accumulator.

NOTE: You can look at the brake pistons to see that the brakes no longer actuate when the brake pedals are pushed.

SUBTASK 32-44-00-480-006

(7) Install rig pins R1 and R2 through the captain's and first officer's rudder pedal shaft rig pin holes [2] and into the structure. The rigging pins are from rigging pin kit, SPL-1585.

NOTE: The placard on the inside of the box for the rigging pin kit identifies the different rigging pins.

E. Procedure

SUBTASK 32-44-00-790-001

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) For the B hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-44-00-720-001

(2) Make sure that the pressure shown on the HYD BRAKE PRESS gage is approximately the same as the B hydraulic system pressure.

NOTE: The HYD BRAKE PRESS gage is in the flight compartment on the main instrument panel for the first officer.

SUBTASK 32-44-00-710-001

(3) Do these steps for the captain's brake pedals:

(a) Push the two brake pedals fully to their stops and set the parking brake.

(b) Release the brake pedals.

(c) Make sure the parking brake engages.

(d) Make sure the parking brake light on the control stand is on.

LOM 411, 427, 428, 432, 443-445, 450, 461-463, 465-999

(e) Make sure the parking brake light on the external power panel is on.

LOM ALL

(f) Look at the pistons on each brake to see that the brakes are engaged.

(g) Release the parking brake.

(h) Make sure the parking brake light on the control stand is off.

LOM 411, 427, 428, 432, 443-445, 450, 461-463, 465-999

(i) Make sure the parking brake light on the external power panel is off.

LOM ALL

(j) Look at the pistons on each brake to see that the brakes are not engaged.

(k) For the B hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(l) Fully push the captain's brake pedals twelve times to remove the pressure from the brake accumulator.

(m) Push the two brake pedals fully to their stops and set the parking brake.

(n) Release the brake pedals.

(o) Make sure the parking brake engages.

(p) Make sure the parking brake light on the control stand is on.

LOM 411, 427, 428, 432, 443-445, 450, 461-463, 465-999

(q) Make sure the parking brake light on the external power panel is on.

LOM ALL

(r) Look at the pistons on each brake to see that the brakes are not engaged.

(s) Release the parking brake.

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(t) For the B hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(u) Push the left brake pedal fully to the stop.

(v) Pull the parking brake lever on the control stand.

(w) Make sure the parking brake will not engage.

(x) Make sure the parking brake light on the control stand is off.

LOM 411, 427, 428, 432, 443-445, 450, 461-463, 465-999

(y) Make sure the parking brake light on the external power panel is off.

LOM ALL

(z) Look at the pistons on each brake to see that the brakes on the left gear are engaged and the brakes on the right gear are not engaged.

(aa) Release the left brake pedal.

(ab) Push the right brake pedal fully to the stop.

(ac) Pull the parking brake lever on the control stand.

(ad) Make sure the parking brake will not engage.

(ae) Make sure the parking brake light on the control stand is off.

LOM 411, 427, 428, 432, 443-445, 450, 461-463, 465-999

(af) Make sure the parking brake light on the external power panel is off.

LOM ALL

(ag) Look at the pistons on each brake to see that the brakes on the right gear are engaged and the brakes on the left gear are not engaged.

(ah) Release the right brake pedal.

SUBTASK 32-44-00-710-002

(4) Do these steps for the first officer's brake pedals:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Push the two brake pedals fully to their stops and set the parking brake.
(b) Release the brake pedals.
(c) Make sure the parking brake engages.
(d) Release the parking brake.
(e) Push the left brake pedal fully to the stop.
(f) Pull the parking brake lever on the control stand.
(g) Make sure the parking brake will not engage.
(h) Release the left brake pedal.
(i) Push the right brake pedal fully to the stop.
(j) Pull the parking brake lever on the control stand.
(k) Make sure the parking brake will not engage.
(l) Release the right brake pedal.

SUBTASK 32-44-00-080-001

(5) Remove rig pins R1 and R2 from the rudder pedal shaft [2].

SUBTASK 32-44-00-720-002

(6) Do this task: Parking Brake Hold Check, TASK 32-44-00-790-801.

END OF TASK

TASK 32-44-00-790-801

4. Parking Brake Hold Check

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task includes these steps:
(a) Parking brake system bleed down test - parking brake set
(b) Parking brake system bleed down test - parking brake released.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment - Left
734	Left Main Landing Gear
744	Right Main Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for the Check

SUBTASK 32-44-00-480-007

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-44-00-480-008

(2) Make sure the tires have chocks installed around them (PAGEBLOCK 10-11-05/201).

SUBTASK 32-44-00-860-007

(3) Release the parking brake.

SUBTASK 32-44-00-860-008

(4) For the A and B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-44-00-870-001

(5) Push the Captain's or the First Officer's left and right toe brake pedals to the stops several times until the brakes no longer actuate.

NOTE: This will release the hydraulic pressure at the accumulator.

(a) Check the pistons on each brake to make sure that the brakes no longer actuate when the brake pedals are pushed.

SUBTASK 32-44-00-860-009

(6) Make sure that the brake accumulator Nitrogen/Dry Air charge is correct.

NOTE: Correct charge pressure from the accumulator placard are located on the rear bulkhead in the right main gear wheel well.

SUBTASK 32-44-00-790-002

> **WARNING** KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(7) To pressurize B hydraulic system to 3000 ±150 psig (20,684 ±1034 kPa), do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-44-00-860-010

(8) Set the parking brake.

NOTE: This step keeps the brake system pressurized with the accumulator.

SUBTASK 32-44-00-720-003

(9) Wait at least 10 minutes for the accumulator temperature to stabilize.

E. Parking Brake Hold Check - Parking Brake Set

SUBTASK 32-44-00-720-004

(1) Write down the pressure shown on the PRESS gage for the brake accumulator.

NOTE: The PRESS gage is located on the rear bulkhead in the right main gear wheel well.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-44-00-860-011

(2) For the B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

NOTE: This will leave the accumulator charged and pressurized.

(a) Record the initial time when the B hydraulic system pressure is removed.

SUBTASK 32-44-00-710-003

(3) Do a check of the brake pressure at the end of any of the time periods that follow. If the necessary pressure drop for one time period is not within the limits, use the next time period.

NOTE: It is permitted to read the brake pressure from the brake pressure gage in the cockpit, or the brake accumulator gage in the wheel well.

(a) After 10 minutes, the pressure drop should be less than 100 psi (689 kPa).

(b) After 30 minutes, the pressure drop should be less than 300 psi (2068 kPa).

(c) After 1 hour, the pressure drop should be less than 500 psi (3447 kPa).

(d) After 8 hours, the pressure should be greater than 1200 psi (8274 kPa) minimum.

SUBTASK 32-44-00-780-001

(4) If the brake accumulator pressure drops faster than permitted, do a check for leaks in the accumulator system.

SUBTASK 32-44-00-780-002

(5) The trouble shooting of the brake system can be delayed until the next convenient maintenance period if the conditions that follow are met:

(a) With the parking brake set, make sure that the brake accumulator pressure drop is less than 800 psi (5516 kPa) in the first 30 minutes.

(b) The system passes the parking brake hold check - parking brake released.

SUBTASK 32-44-00-860-012

(6) Release the parking brake.

SUBTASK 32-44-00-720-005

(7) Push the Captain's or First Officer's left and right toe brake pedals to the stops 7 times while observing the brake pistons on all of the brakes.

NOTE: Wait approximately 3 seconds each time you apply the brakes.

(a) Make sure that the brake pistons compress and release each of the 7 times the pedals are pushed.

F. Parking Brake Hold Check - Parking Brake Released

SUBTASK 32-44-00-790-003

WARNING	KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Pressurize B hydraulic system to 3000 ±150 psig (20,684 ±1034 kPa), do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-44-00-720-006

(2) Wait at least 10 minutes for the accumulator temperature to stabilize.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-44-00-720-007

(3) Write down the pressure shown on the PRESS gage for the brake accumulator.

NOTE: The PRESS gage is located on the rear bulkhead in the right main gear wheel well.

SUBTASK 32-44-00-860-013

(4) For the B hydraulic systems, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

NOTE: This will leave the accumulator charged and pressurized.

(a) Record the initial time when the B hydraulic system pressure is removed.

SUBTASK 32-44-00-780-003

(5) Do a check of the brake pressure at 30 minutes after the test start.

(a) Make sure that the pressure decrease of the brake accumulator is less than 450 psi (3103 kPa).

SUBTASK 32-44-00-780-004

(6) If the brake accumulator pressure drops faster than permitted, do a check the accumulator system for leaks.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-44-00-790-004

WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Pressurize B hydraulic system to 3000 ±150 psig (20,684 ±1034 kPa), do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-44-00-720-009

(2) Set the parking brake.

SUBTASK 32-44-00-860-014

(3) For the B hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PARKING BRAKE LINKAGE - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these nine tasks:

(1) A removal of the parking brake lever.

(2) An installation of the parking brake lever.

(3) A removal of the parking brake jackshaft mechanism.

(4) An installation of the parking brake jackshaft mechanism.

(5) A removal of the parking brake latch mechanism.

(6) An installation of the parking brake latch mechanism.

(7) A removal of the parking brake latch switch.

(8) An installation of the parking brake latch switch.

(9) A visual inspection of the parking brake mechanism.

TASK 32-44-11-000-801

2. Parking Brake Lever Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left

C. Prepare for the Removal

SUBTASK 32-44-11-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-44-11-480-002

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-44-11-860-001

(3) Release the parking brake.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-44-11-860-018

(4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

SUBTASK 32-44-11-860-002

> **WARNING** STAY AWAY FROM THE STABILIZER TRIM WHEEL ON THE CONTROL STAND IF YOU USE THE STABILIZER TRIM SWITCH ON THE CONTROL WHEEL. THE STABILIZER TRIM SWITCH CAN CAUSE THE STABILIZER TRIM WHEEL TO TURN QUICKLY. INJURY TO PERSONS CAN OCCUR IF YOU TOUCH IT WHEN IT TURNS.

(5) Open the access panels on the left side of the control stand to get access to the parking brake linkage.

D. Parking Brake Lever Removal

SUBTASK 32-44-11-020-001

(1) Remove the cotter pin [5], washer [4], and pin [3] which hold the parking brake lever [1] to the rod [6].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-44-11-020-002

(2) Remove the screw [2] which hold the parking brake lever [1] to the control stand.

LOM 462-999

SUBTASK 32-44-11-020-018

(3) Remove the bolt [8], washer [9], and bearing [10] which hold the parking brake lever [1] to the control stand.

LOM ALL

SUBTASK 32-44-11-020-003

(4) Remove the parking brake lever [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

F88751 S0006575618_V2

Parking Brake Lever Installation
Figure 401/32-44-11-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Parking Brake Lever Installation
Figure 401/32-44-11-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Parking Brake Lever Installation
Figure 401/32-44-11-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Parking Brake Lever Installation
Figure 401/32-44-11-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-44-11-400-801

3. Parking Brake Lever Installation

(Figure 401)

A. References

Reference	Title
32-44-00-820-801	Parking Brake System Adjustment (P/B 501)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Parking brake lever	32-44-11-05-045	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461
		32-44-11-05A-070	LOM 462-999
5	Cotter pin	32-44-11-05-040	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461
		32-44-11-05A-005	LOM 462-999

C. Location Zones

Zone	Area
211	Flight Compartment - Left

D. Parking Brake Lever Installation

SUBTASK 32-44-11-420-001

(1) Install the parking brake lever [1] on the control stand.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-44-11-420-002

(2) Install the screws [2] which hold the parking brake lever [1] to the control stand.

LOM 462-999

SUBTASK 32-44-11-420-013

(3) Install the bearing [10], washer [9], and bolt [8] which hold the parking brake lever [1] to the stand.

LOM ALL

SUBTASK 32-44-11-020-004

(4) Install the pin [3] to hold the parking brake lever [1] to the rod [6].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-44-11-820-001

(5) If the parking brake lever [1] is not flush with the control stand, adjust the length of the rod [6], do this task: Parking Brake System Adjustment, TASK 32-44-00-820-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 462-999

SUBTASK 32-44-11-820-005

(6) If the stop surface of the parking brake lever [1] is not against the top of the control stand, adjust the length of the rod [6] (TASK 32-44-00-820-801).

LOM ALL

SUBTASK 32-44-11-020-005

(7) Install the washer [4] and new cotter pin [5] to hold the pin [3] in the rod [6].

SUBTASK 32-44-11-410-001

WARNING STAY AWAY FROM THE STABILIZER TRIM WHEEL ON THE CONTROL STAND IF YOU USE THE STABILIZER TRIM SWITCH ON THE CONTROL WHEEL. THE STABILIZER TRIM SWITCH CAN CAUSE THE STABILIZER TRIM WHEEL TO TURN QUICKLY. INJURY TO PERSONS CAN OCCUR IF YOU TOUCH IT WHEN IT TURNS.

(8) Close the access panels on the left side of the control stand.

SUBTASK 32-44-11-860-019

(9) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

SUBTASK 32-44-11-860-017

(10) Set the parking brake.

(a) Make sure that the parking brake light comes on.

END OF TASK

TASK 32-44-11-000-802

4. Parking Brake Jackshaft Removal

(Figure 402)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left

C. Access Panels

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for the Removal

SUBTASK 32-44-11-480-003

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-44-11-480-004

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-44-11-860-003

(3) Release the parking brake.

SUBTASK 32-44-11-860-004

(4) Open this access panel:

Number	Name/Location
112A	Forward Access Door

to get access to the parking brake jackshaft mechanism.

E. Parking Brake Jackshaft Mechanism Removal

SUBTASK 32-44-11-020-006

(1) Remove the bolt [30], washer [31], and nut [32] to disconnect the rod [29] from the outboard jackshaft lever.

SUBTASK 32-44-11-020-007

(2) Remove the bolt [33], washer [34], and nut [35] to disconnect the rod [21] from the inboard jackshaft lever.

SUBTASK 32-44-11-020-008

(3) Do these steps to remove the jackshaft [28]:

(a) Remove the cotter pin [23], nut [24], and washer [25] from the inboard end of the stud [22] that goes through the jackshaft [28].

(b) Remove the stud [22] from the other side of the jackshaft [28].

(c) Remove the jackshaft [28] from the airplane.

1) Remove the bearings [26] and the spacer [27] if it is necessary.

NOTE: One bearing is installed in each end of the jackshaft, and the spacer is installed between these bearings.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F89214 S0006575622_V2

Parking Brake Jackshaft Mechanism Installation
Figure 402/32-44-11-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F89685 S0006575623_V3

Parking Brake Jackshaft Mechanism Installation
Figure 402/32-44-11-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-44-11-400-802

5. **Parking Brake Jackshaft Installation**
(Figure 402)

A. **References**

Reference	Title
32-44-00-820-801	Parking Brake System Adjustment (P/B 501)

B. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
23	Cotter pin	32-44-11-01-115	LOM ALL
26	Bearing	32-44-11-01-140	LOM ALL
27	Spacer	32-44-11-01-145	LOM ALL

C. **Location Zones**

Zone	Area
211	Flight Compartment - Left

D. **Access Panels**

Number	Name/Location
112A	Forward Access Door

E. **Parking Brake Jackshaft Mechanism Installation**

SUBTASK 32-44-11-420-003

(1) Install new bearings [26] and new spacer [27] if they were removed.

NOTE: One bearing is installed in each end of the jackshaft, and the spacer is installed between these bearings.

SUBTASK 32-44-11-420-004

(2) Do these steps to install the jackshaft [28]:

(a) Put the jackshaft [28] in its position in the airplane.

1) Make sure that the jackshaft lever with the rig pin hole is above the lever switch.

(b) Install the stud [22] in the jackshaft [28].

(c) Install the washer [25], nut [24], and new cotter pin [23] on the end of the stud [22].

SUBTASK 32-44-11-420-005

(3) Install the bolt [30], washer [31], and nut [32] to connect the rod [29] to the outboard jackshaft lever.

SUBTASK 32-44-11-020-009

(4) Install the bolt [33], washer [34], and nut [35] to connect the rod [21] to the inboard jackshaft lever.

(a) Make sure that the end of the bolt [33] has clearance with the adjacent bracket.

SUBTASK 32-44-11-820-002

(5) If the length of any of the connecting rods were changed, do this task: Parking Brake System Adjustment, TASK 32-44-00-820-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-44-11-860-005

(6) Close this access panel that you opened to get access to the parking brake jackshaft mechanism:

Number	Name/Location
112A	Forward Access Door

——— END OF TASK ———

TASK 32-44-11-000-803

6. Parking Brake Latch Removal

(Figure 403)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Removal

SUBTASK 32-44-11-480-005

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-44-11-480-006

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-44-11-860-006

(3) Release the parking brake.

SUBTASK 32-44-11-860-007

(4) Open this access panel to get access to the parking brake latch:

Number	Name/Location
112A	Forward Access Door

E. Parking Brake Latch Removal

SUBTASK 32-44-11-020-010

(1) Do these steps to remove the arm [55]:

(a) Remove the nut [54], washer [52], washer [53], and bolt [51] which holds the rod [29] to the arm [55].

NOTE: This step is optional.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the nut [59], washer [58], washer [57], and bolt [56] which holds the arm [55] to the latch [63].

(c) Remove the arm [55] from the latch [63].

SUBTASK 32-44-11-020-011

(2) Disconnect the return spring [64] from the pawl.

SUBTASK 32-44-11-020-012

(3) Do these steps to remove the inboard housing [66] from the latch [63]:

(a) Remove the nut [62], washer [61], and bolt [60] which hold the inboard housing [66] to the airplane.

(b) Remove the inboard housing [66] with the bearing [67] from the latch [63].

SUBTASK 32-44-11-020-013

(4) Remove the latch [63] from the outboard housing [65].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F89915 S0006575626_V2

Parking Brake Latch Mechanism Installation
Figure 403/32-44-11-990-803 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F89776 S0006575627_V2

Parking Brake Latch Mechanism Installation
Figure 403/32-44-11-990-803 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-44-11-400-803

7. Parking Brake Latch Installation

(Figure 403)

A. References

Reference	Title
32-44-00-820-801	Parking Brake System Adjustment (P/B 501)

B. Location Zones

Zone	Area
211	Flight Compartment - Left

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Parking Brake Latch Mechanism Installation

SUBTASK 32-44-11-420-006

(1) Install the latch [63] in the outboard housing [65].

SUBTASK 32-44-11-420-007

(2) Do these steps to install the inboard housing [66] for the latch [63]:

(a) Install the inboard housing [66] and bearing [67] on the latch [63].

(b) Install the bolt [56], washer [57], washer [58], and nut [59] which hold the inboard housing [66] to the airplane.

SUBTASK 32-44-11-020-014

(3) Connect the return spring [64] to the pawl.

SUBTASK 32-44-11-420-008

(4) Do these steps to install the arm [55]:

(a) Install the arm [55] on the latch [63] such that the bolt holes in the arm [55] and the latch [63] are aligned.

1) Make sure the flat surface of the arm [55] is on the side that is opposite the bearing and the yoke for the rod is pointing down (Figure 403).

(b) Install the bolt [56], washer [57], washer [58], and nut [59] which holds the arm [55] to the latch [63].

(c) Install the bolt [51], washer [52], washer [53], and nut [54] which hold the rod [29] to the arm [55].

NOTE: Install the thin washer [53] under the head of the bolt [51].

SUBTASK 32-44-11-820-003

(5) If you replaced the pawls, the length of the pawls was changed, or the length of the connecting rod was changed, do this task: Parking Brake System Adjustment, TASK 32-44-00-820-801.

SUBTASK 32-44-11-860-008

(6) Close this access panel that you opened to get access to the parking brake latch mechanism:

Number	Name/Location
112A	Forward Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-44-11-000-804

8. Parking Brake Latch Switch Removal

(Figure 404)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Removal

SUBTASK 32-44-11-480-007

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-44-11-480-008

(2) Make sure the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-44-11-860-009

(3) Release the parking brake.

SUBTASK 32-44-11-860-010

(4) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-44-11-860-011

(5) Open this access panel to get access to the parking brake latch mechanism:

Number	Name/Location
112A	Forward Access Door

E. Parking Brake Latch Switch Removal

SUBTASK 32-44-11-020-015

(1) Disconnect the wires [82] from the switch [81].

SUBTASK 32-44-11-020-016

(2) Remove the screw [83] and nut [84] which hold the switch [81] to the mounting bracket.

NOTE: The switch and the switch actuator are held together by the mounting screws.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-44-11-020-017

(3) Remove the switch [81] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F90036 S0006575630_V2

Parking Brake Latch Switch Installation
Figure 404/32-44-11-990-804 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F90037 S0006575631_V2

Parking Brake Latch Switch Installation
Figure 404/32-44-11-990-804 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-44-11-400-804

9. Parking Brake Latch Switch Installation

(Figure 404)

A. References

Reference	Title
32-44-00-820-801	Parking Brake System Adjustment (P/B 501)
FIM 32-09 TASK 821	Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
81	Switch	32-44-11-01-070	LOM ALL

C. Location Zones

Zone	Area
211	Flight Compartment - Left

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Parking Brake Latch Switch Installation

SUBTASK 32-44-11-420-009

(1) Make sure that the switch actuator is correctly mated to the switch plunger on the switch [81].

SUBTASK 32-44-11-420-010

(2) Hold the switch [81] in its position on the airplane.

SUBTASK 32-44-11-420-011

(3) Install the screw [83] and nut [84] which hold the switch [81] to the mounting bracket.

SUBTASK 32-44-11-420-012

(4) Connect the wires [82] to the switch [81].

SUBTASK 32-44-11-860-012

(5) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

SUBTASK 32-44-11-820-004

(6) Adjust the parking brake latch switch [81], do the applicable steps in this task: Parking Brake System Adjustment, TASK 32-44-00-820-801.

(a) Do not bend the switch actuator arm to adjust the switch [81].

SUBTASK 32-44-11-720-002

(7) Do a function check of the parking brake latch switch as follows:

(a) Release the parking brake.

(b) On the PSEU display, check the input status of the parking brake latch switch output.

NOTE: Instructions on how to show the input status are in this task: FIM 32-09 TASK 821.

1) Make sure that the status of D10984 pin 28 is GND.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Make sure that the status of D10982 pin 61 is NO GND.

(c) Set the parking brake.

(d) On the PSEU display, check the input status of the parking brake latch switch output.

1) Make sure that the status of D10984 pin 28 is NO GND.

2) Make sure that the status of D10982 pin 61 is GND.

SUBTASK 32-44-11-410-004

(8) Close this access panel that you opened to get access to the parking brake latch mechanism:

Number	Name/Location
112A	Forward Access Door

——— END OF TASK ———

TASK 32-44-11-000-805

10. Parking Brake Mechanism Visual Inspection

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

Zone	Area
211	Flight Compartment - Left

B. Access Panels

Number	Name/Location
112A	Forward Access Door

C. Parking Brake Mechanism Inspection

SUBTASK 32-44-11-860-014

(1) Open the access panels on the left side of the control stand to get access to the parking brake mechanism.

SUBTASK 32-44-11-860-015

(2) Open this access panel to get access to the parking brake mechanism:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-44-11-210-001

(3) Do a detail visual inspection of the mechanical control path for the parking brake mechanism.

SUBTASK 32-44-11-410-002

(4) Close the access panels on the left side of the control stand.

NOTE: Before installing the access panels, make sure the area is clean and there are no foreign objects.

SUBTASK 32-44-11-860-016

(5) Close this access panel that you opened to get access to the parking brake mechanism:

Number	Name/Location
112A	Forward Access Door

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

2428058 S0000560962_V1

Control Stand
Figure 405/32-44-11-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PARKING BRAKE SHUTOFF VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the parking brake shutoff valve

(2) An installation of the parking brake shutoff valve.

B. The parking brake shutoff valve is located on the aft wall of the main landing gear wheel well.

C. In this procedure the parking brake shutoff valve will be referred to as the valve assy [5].

TASK 32-44-21-000-801

2. Parking Brake Shutoff Valve Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Removal

SUBTASK 32-44-21-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-44-21-860-001

(2) Remove the pressure from the normal (system B) and the alternate (system A) hydraulic systems, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-44-21-480-002

(3) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-44-21-860-002

(4) Release the parking brake.

SUBTASK 32-44-21-840-001

(5) Operate the brake pedals until the gage at the brake accumulator shows no change in the pressure.

(a) Operate the brake pedals approximately 12 times to fully release the pressure from the accumulator.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-44-21-860-003

(6) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Parking Brake Shutoff Valve Removal

SUBTASK 32-44-21-020-001

(1) Disconnect the electrical connector [6] from the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-020-002

(2) Disconnect the tee fitting from the reducer [3] on the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-020-003

(3) Disconnect the elbow from the reducer [7] on the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-480-003

(4) Install caps or plugs on the elbow and the tee fitting.

SUBTASK 32-44-21-020-004

(5) Remove the bolt [2] and washer [1] which hold the parking brake shutoff valve assy [5] to the airplane.

SUBTASK 32-44-21-020-005

(6) If the replacement parking brake shutoff valve assy [5] does not have hydraulic fittings installed, do these steps:

(a) Remove the reducer [3], reducer [7] and packings [4].

(b) Discard the packings [4].

SUBTASK 32-44-21-480-004

(7) Install plugs in the ports of the parking brake shutoff valve assy [5].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Parking Brake Shutoff Valve Installation
Figure 401/32-44-21-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PARKING BRAKE SHUTOFF VALVE

B

F62208 S0006575638_V3

Parking Brake Shutoff Valve Installation
Figure 401/32-44-21-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-44-21-400-801

3. **Parking Brake Shutoff Valve Installation**

(Figure 401)

A. **References**

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-41-00-870-801	Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves (P/B 201)
SWPM 20-20-00, Section 14F	Standard Wiring Practices Manual
SWPM 20-60-03	Special Protection of Electrical Connectors

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meter - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

C. **Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00054	Fluid - Hydraulic Assembly Lubricant - MCS 352B (Formerly Monsanto MCS 352B)	
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Packing	32-44-21-01-033	LOM ALL
5	Valve assy	32-44-21-01-010	LOM ALL
		32-44-21-01-035	LOM ALL
		32-44-21-01-105	LOM ALL

E. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

F. Parking Brake Shutoff Valve Installation

SUBTASK 32-44-21-080-001

(1) Remove the plugs or caps from the ports of the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-420-001

(2) If the replacement parking brake shutoff valve assy [5] does not have hydraulic fittings installed, do these steps:

(a) Lubricate the reducer [3], reducer [7] and packings [4] for the parking brake shutoff valve assy [5] with hydraulic fluid, D00153, or MCS 352B fluid, D00054.

(b) Install the packing [4] on the reducer [3].

(c) Install the reducer [3] in the parking brake shutoff valve assy [5].

(d) Install the packing [4] on the reducer [7].

(e) Install the reducer [7] in the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-100-001

(3) Do the steps below to help get a good electrical bond between the valve assy [5] and the support bracket:

(a) To fully clean the mating surface of the support bracket and the valve assy [5], do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

(b) For all cleaned areas, and if there is any damage to the finish on the valve assy [5], manually apply coating, C00064.

SUBTASK 32-44-21-390-001

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(4) Apply a layer of the Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (alternate), to the threads and the shank of each bolt [2].

(a) Do not let the Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136, dry before you install the bolts [2].

(b) Install the bolts [2] when the Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136, is wet.

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SUBTASK 32-44-21-420-002

(5) Hold the parking brake shutoff valve assy [5] in its position on the airplane.

SUBTASK 32-44-21-420-003

(6) Install the bolt [2] and washer [1] which hold the parking brake shutoff valve assy [5] to the airplane.

SUBTASK 32-44-21-390-002

(7) Use sealant, A00247, or sealant, A02315, to apply a fay seal to the mating surface between the valve assy [5] and the support bracket (SWPM 20-20-00, Section 14F).

SUBTASK 32-44-21-760-001

(8) Use an intrinsically safe approved bonding meter, COM-1550, to measure the electrical resistance between the valve assy [5] and the bracket.

(a) Make sure that the resistance is less than 0.0025 ohms.

(b) If the measured resistance is not less than 0.0025 ohms, do the steps to clean the mating surfaces of the bracket and valve assy [5].

(c) Apply coating, C00064, again.

SUBTASK 32-44-21-080-002

(9) Remove the caps or plugs from the elbow and the tee fitting.

SUBTASK 32-44-21-420-004

(10) Connect the tee fitting to the reducer [3] on the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-420-005

(11) Connect the elbow to the reducer [7] on the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-420-006

(12) Before you connect the electrical connector [6] to the parking brake shutoff valve assy [5], examine the connector for corrosion.

WARNING	DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, correct the problem SWPM 20-60-03.

(b) Apply the D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

(13) Connect the electrical connector [6] to the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-860-004

(14) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	16	C01346	LANDING GEAR PARKING BRAKE

G. Parking Brake Shutoff Valve Installation Test

SUBTASK 32-44-21-790-001

(1) Do these steps to do a leak check of the parking brake shutoff valve assy [5]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, DRIVE MECHANISMS AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU OPERATE THEM WITH ELECTRICAL OR HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(a) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(b) Fully push the captain's brake pedals twelve times.

(c) Look for leaks around the parking brake shutoff valve assy [5].

SUBTASK 32-44-21-710-001

(2) Do this task: Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves, TASK 32-41-00-870-801.

SUBTASK 32-44-21-710-002

(3) Do these steps to do a check of the parking brake shutoff valve assy [5] installation:

(a) Set the parking brake.

(b) Make sure that the parking brake light on the captain's control stand comes on.

(c) Release the parking brake.

(d) Make sure that the parking brake light is off.

SUBTASK 32-44-21-200-001

(4) Make sure that the ANTISKID INOP light, on the P2 panel, is off.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-44-21-860-005

(1) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1. General

A. This procedure tells you how to deflate and inflate the main and nose landing gear tires.

TASK 32-45-00-000-801

2. Tires and Wheels - Deflation/Inflation

(Figure 201)

A. References

Reference	Title
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
12-15-51-610-802	Add Nitrogen or Air to the Tire (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1524	Deflator - Tire, Valve Core Removal and Installation (Large Bore) Part #: 320008A-SO Supplier: SFN11 Part #: 968RB-1 Supplier: 5W9Y4 Opt Part #: 320008A Supplier: SFN11
COM-4046	Deflator - Tire, Valve Core Removal and Installation (Small Bore) and Tire Deflation Part #: 320008B-SO Supplier: SFN11 Part #: 968RB Supplier: 5W9Y4 Opt Part #: 320008B Supplier: SFN11

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Deflate the Tire

SUBTASK 32-45-00-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-45-00-480-005

(2) Make sure that the wheel and tire assembly is clear of the ground before you deflate the tire, do the task that applies for the nose or the main landing gear:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Do this task: Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801.

(b) Do this task: Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E, TASK 07-11-03-580-802.

SUBTASK 32-45-00-480-002

(3) Remove the valve cap [1] from the wheel and tire.

SUBTASK 32-45-00-840-001

WARNING	FULLY DEFLATE THE TIRE BEFORE YOU REMOVE THE WHEEL AND TIRE ASSEMBLY. OR, DO AN INSPECTION OF THE WHEEL AND TIRE TO MAKE SURE THAT THEY ARE SAFE. AIR PRESSURE CAN CAUSE AN EXPLOSION OF THE DAMAGED WHEEL AND TIRE COMPONENTS. INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

WARNING	MAKE SURE THAT ALL PERSONNEL ARE CLEAR OF THE INFLATION VALVE ASSEMBLY PATH WHILE YOU REMOVE IT. IF THE INFLATION VALVE ASSEMBLY EJECTS WHILE YOU REMOVE IT, INJURY TO PERSONNEL CAN OCCUR.

(4) Deflate the tire with the small bore tire deflator, COM-4046 or large bore tire deflator, COM-1524.

NOTE: Always go near the wheels from the front or rear.

NOTE: If the tire is hot, let the tire cool before you deflate it.

WARNING	DO NOT LOOSEN OR REMOVE THE VALVE BODY UNDER PRESSURE. THE VALVE CAN BLOW OUT CAUSING INJURY TO PERSONNEL.

(a) If you cannot use the usual procedure to deflate the tire because the valve core is damaged, do these steps:

1) Turn the valve assembly slowly in a counterclockwise direction until there is gas leakage through the boss.

2) At the same time, push lightly on the valve assembly.

3) After all of the gas has been released, remove the valve assembly from the tire.

E. Inflate the Tire

SUBTASK 32-45-00-600-001

WARNING	USE A PRESSURE SOURCE WITH A REGULATOR TO INFLATE THE TIRES. A PRESSURE SOURCE WITHOUT A REGULATOR CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Do this task: Add Nitrogen or Air to the Tire, TASK 12-15-51-610-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TIRE INFLATION VALVE
(EXAMPLE, 2 WHEELS)

A

TIRE INFLATION VALVE
(EXAMPLE, 4 WHEELS)

B

F98046 S0006575644_V2

Landing Gear Tire Servicing
Figure 201/32-45-00-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TIRE INFLATION VALVE
(EXAMPLE, 2 WHEELS)

A

TIRE INFLATION VALVE
(EXAMPLE, 4 WHEELS)

B

F97697 S0006575645_V2

Landing Gear Tire Servicing
Figure 201/32-45-00-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TIRES AND WHEELS - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) A fast check of the wheels

(2) An inspection of the wheels

(3) An inspection of the tires.

(4) An inspection of the wheels bearings.

TASK 32-45-00-700-801

2. Wheels Fast Check (Wheel Installed on the Airplane)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Procedure

SUBTASK 32-45-00-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-45-00-210-001

(2) Look at the wheels for these types of damage:

(a) Corrosion

(b) Cracks

(c) Flaked or blistered paint

(d) Damage to the heat shield

(e) Tiebolts and tiebolt nuts that are loose, damaged, or missing

(f) Damage from heat

(g) Chafing on the rim of the wheel due to low tire pressure.

NOTE: It is not necessary to remove the hubcap to examine the wheels for damage unless the examination reveals a condition that makes a more detailed check of the area hidden by the hubcap necessary.

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SUBTASK 32-45-00-020-001

(3) If you found one or more of these, replace the wheel-tire assembly:

(a) There is a loose, or damaged tiebolt.

(b) A tiebolt is missing.

SUBTASK 32-45-00-210-002

(4) Make sure that the hubcaps are not loose.

(a) Tighten or replace hubcaps if it is necessary.

END OF TASK

TASK 32-45-00-700-802

3. Wheels Inspection (Wheel Removed from the Airplane)

A. References

Reference	Title
05-51-07-210-801	High Energy Stop (P/B 201)

B. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Procedure

SUBTASK 32-45-00-210-003

(1) Examine the wheel for:

(a) breaks

(b) corrosion

(c) cracks

(d) distortion

(e) flaked or blistered paint

(f) heat shield damage

(g) loose, damaged, or missing tiebolts and tiebolt nuts

(h) nicks or gouges

(i) overheat damage

(j) scratches along the rim of a wheel that show the wheel rolled without a tire

(k) worn plating

(l) other damage.

SUBTASK 32-45-00-210-004

(2) Examine the grease seals for:

(a) nicks

(b) gouges

(c) overheat damage.

SUBTASK 32-45-00-210-005

(3) Examine the bearing and bearing surfaces (TASK 32-45-00-211-801).

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LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-45-00-210-006

(4) Examine the brake keyway inserts for wear.

LOM 411, 416, 422, 425, 426, 429-431, 433, 434, 440, 442-447, 450-457, 461-463, 465-999; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 POST SB 737-32-1429 OR POST SB 737-32-1441; LOM 427, 428 PRE SB 737-32-1494

SUBTASK 32-45-00-210-010

(5) Examine the brake torque bars for wear.

LOM ALL

SUBTASK 32-45-00-210-007

(6) Examine the wheel heat shield for:

NOTE: Dents, scratches and discoloration are permitted.

(a) cracks

(b) tears

LOM 412, 415, 423, 424, 432, 439, 441, 464; LOM 402, 404, 406, 407, 420, 437, 438, 458-460 PRE SB 737-32-1429 AND PRE SB 737-32-1441; LOM 427, 428 POST SB 737-32-1494

SUBTASK 32-45-00-210-008

(7) Make sure the wheel balance weights are tightly installed.

LOM ALL

SUBTASK 32-45-00-220-001

(8) If a wheel has a blown thermal fuse, do this task: High Energy Stop, TASK 05-51-07-210-801.

END OF TASK

TASK 32-45-00-700-803

4. Tires - Inspection

(Figure 601, Figure 602)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) Bias ply tires must not be used on the same axle as radial ply tires.

B. References

Reference	Title
12-15-51-780-801	Landing Gear Tire Pressure Check and Tire Servicing (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Tires Inspection

SUBTASK 32-45-00-480-004

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-45-00-220-002

(2) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, TASK 12-15-51-780-801.

SUBTASK 32-45-00-210-009

(3) Do the steps that follow and examine the tires (Figure 601, Figure 602):

(a) Examine the tires for air leaks, abrasions, unusual worn areas, cuts, and flat spots.

(b) Examine the tires for the presence of contaminants.

1) Keep the tires clean of contaminants such as oils, fuels, hydraulic fluids, aircraft cleaning agents, and greases.

2) Cover the tire if these or other potentially harmful chemicals spill on the tire.

3) Wipe off the tire with a soapy solution if the tire becomes contaminated.

4) The tire should be removed from service as soon as practical if the surface of the tire appears soft, spongy, or there are bulges present.

(c) Remove the tires that have the conditions that follow:

1) Cuts or weather cracks in the grooves, the tread, shoulders or sidewalls that exceed the limits in (Figure 602).

2) Blisters, bulges, or other signs of ply separation in the tread, shoulder or sidewall area.

3) Tires with a flat spot which shows the tread reinforcement ply (bias) or cut protector (radial).

NOTE: If the tread reinforcement ply (bias) or the cut protector (radial) shows, the tire should be replaced as soon as possible. If necessary, the tire may be used for a small number of landings until it is replaced. However, you may not be able to retread the tire if you leave the tire in service too long with this condition.

4) Other types of damage which can cause tire problems.

(d) Examine the tires for worn areas:

1) Measure the depth of the tire tread groove at three points that are equally apart.

2) If the average depth of any groove is 1/32 inch (0.79 mm) or less, the tire must be replaced at the next convenient maintenance opportunity.

3) If the tread belt ply (radial) or carcass ply (bias) shows at any location, the tire is not serviceable and must be replaced.

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4) If the tread is worn so that the cut protector (radial) or tread reinforcement ply (bias) shows at any location, the tire must be replaced at the next convenient maintenance opportunity.

NOTE: If the cut protector (radial) or tread reinforcement ply (bias) shows, the tire should be replaced as soon as possible. If necessary, the tire may be used for a small number of landings until it is replaced. However, you may not be able to retread the tire if you leave the tire in service too long with this condition.

E. Tire Tread Conditions and Service

SUBTASK 32-45-00-220-003

WARNING DO NOT PUSH ON THE TIRE WITH TOOLS OR OTHER OBJECTS. A DAMAGED TIRE CAN EXPLODE AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) See (Figure 602) for the tire tread conditions.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RADIAL TIRE

1 THE TREAD REINFORCEMENT/CUT PROTECTOR CAN BE METAL OR KEVLAR.

F98051 S0006575652_V4

Tire Nomenclature (Example)
Figure 601/32-45-00-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BIAS PLY TIRE

1 THE TREAD REINFORCEMENT/CUT PROTECTOR CAN BE METAL OR KEVLAR.

L41305 S0006575653_V5

Tire Nomenclature (Example)
Figure 601/32-45-00-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CIRCUMFERENTIAL CUTS

CIRCUMFERENTIAL CUTS THAT PENETRATE ANY OF THE FABRIC PLIES ARE NOT SERVICEABLE.

TRANSVERSE CUTS

(A) TRANSVERSE CUTS THAT ARE CONTAINED WITHIN A RIB AND PENETRATE INTO THE CARCASS PLIES (BIAS) OR BELT PLIES (RADIAL) ARE NOT SERVICEABLE.

(B) CUTS THAT EXTEND ACROSS A RIB FROM GROOVE TO GROOVE WHICH ARE DEEPER THAN THE GROOVE ARE NOT SERVICEABLE.

F98055 S0006575654_V3

Tire Wear Conditions (Example)
Figure 602/32-45-00-990-803 (Sheet 1 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PUNCTURE

TIRES WITH HOLES LARGER THAN 3/8 INCH (9.53 mm) DIAMETER OR HOLES THAT PENETRATE INTO THE CARCASS PLIES (BIAS) OR BELT PLIES (RADIAL) ARE NOT SERVICEABLE.

RIB UNDERCUTS

TIRES WITH A CRACK THAT EXTENDS BELOW A TREAD RIB ARE NOT SERVICEABLE.

GROOVE CRACKS

TIRES WITH CIRCUMFERENTIAL CRACKS AT THE BOTTOM OF THE GROOVES ARE NOT SERVICEABLE IF THE CRACKS EXPOSE ANY FABRIC.

F98057 S0006575655_V3

Tire Wear Conditions (Example)
Figure 602/32-45-00-990-803 (Sheet 2 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CIRCUMFERENTIAL SIDEWALL CUTS OR CRACKS

RADIAL SIDEWALL CUTS OR CRACKS

TIRES WITH CIRCUMFERENTIAL OR RADIAL CUTS OR CRACKS IN EITHER THE SIDEWALL OR SHOULDER AREA, WHICH EXPOSE THE FABRIC, SHOULD BE IMMEDIATELY REMOVED FROM THE AIRCRAFT. TIRES WITH CIRCUMFERENTIAL OR RADIAL CUTS IN EITHER THE SIDEWALL OR SHOULDER AREA, WHICH ARE DEEP ENOUGH TO REACH THE FABRIC, ARE NOT SERVICEABLE.

OZONE AND/OR WEATHER CUTS OR CRACKS

TIRES WITH CUTS OR CRACKS IN THE SIDEWALL WHICH ARE CAUSED BY AGE/WEATHER DETERIORATION ARE NOT SERVICEABLE IF THE FABRIC IS EXPOSED.

F98061 S0006575656_V4

Tire Wear Conditions (Example)
Figure 602/32-45-00-990-803 (Sheet 3 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TREAD FLAKING, CHIPPING OR CHUNKING

TIRES WITH FLAKING, CHIPPING OR CHUNKING TREADS ARE NOT SERVICEABLE IF ANY FABRIC IS EXPOSED.

OPEN TREAD SPLICE

TIRES WITH AN OPEN TREAD SPLICE ARE NOT SERVICEABLE. A CLOSED TREAD SPLICE WILL APPEAR AS A THIN LINE THAT CROSSES THE TREAD RIBS.

THROWN TREAD

TIRES WITH THROWN TREADS ARE NOT SERVICEABLE.

PEELED RIB

TIRES WITH PEELED RIBS ARE NOT SERVICEABLE.

F98065 S0006575657_V2

Tire Wear Conditions (Example)
Figure 602/32-45-00-990-803 (Sheet 4 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CHEVRON CUTS

TIRES WITH CHEVRON CUTS IN THE TREAD ARE NOT SERVICEABLE IF ANY OF THE SINGLE CUT LIMITS ARE EXCEEDED OR CHUNKING OCCURS WHICH EXPOSES THE FABRIC.

F98066 S0006575658_V2

Tire Wear Conditions (Example)
Figure 602/32-45-00-990-803 (Sheet 5 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TREAD FLAT SPOTS

FLAT SPOT

TIRES WITH FLAT SPOTS ARE NOT SERVICEABLE IF THE FLAT SPOT EXPOSES THE TREAD REINFORCEMENT OR CUT PROTECTOR PLIES OR TIRE BALANCE IS AFFECTED.

ICE SKID BURN/TREAD RUBBER REVERSION

TIRES WITH ICE BURN/TREAD RUBBER REVERSION ARE NOT SERVICEABLE IF THE DAMAGE EXPOSES THE TREAD REINFORCEMENT OR CUT PROTECTOR PLIES OR TIRE BALANCE IS AFFECTED.

F98067 S0006575659_V2

Tire Wear Conditions (Example)
Figure 602/32-45-00-990-803 (Sheet 6 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SIDEWALL SEPARATION

TIRES WITH BLISTERS OR BULGES IN THE SIDEWALL ARE NOT SERVICEABLE.
REMOVE TIRE IMMEDIATELY.

TREAD SEPARATION

TIRES WITH BLISTERS OR BULGES IN THE TREAD ARE NOT SERVICEABLE.
REMOVE TIRE IMMEDIATELY.

F98068 S0006575660_V2

Tire Wear Conditions (Example)
Figure 602/32-45-00-990-803 (Sheet 7 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TIRE SHOULD BE REMOVED
IF TREAD WEARS BELOW
BOTTOM OF TREAD GROOVE.

TIRE MUST BE REPLACED AT THE NEXT CONVENIENT MAINTENANCE OPPORTUNITY IF THE TREAD IS WORN, AND THE TREAD REINFORCEMENT OR CUT PROTECTOR PLIES IS SHOWING ON SHOULDER.

(TIRE SHOULD BE REMOVED IF ANY FABRIC IS SHOWING ON SHOULDER.)

TIRE SHOULD BE REMOVED IF
BLISTERS OR CRACKS ARE
FOUND IN A GROOVE BOTTOM
WHICH EXPOSES FABRIC.

SHOULDER WEAR CONDITIONS

L04566 S0006575661_V5

Tire Wear Conditions (Example)
Figure 602/32-45-00-990-803 (Sheet 8 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-45-00-211-801

5. **Wheel Bearings Inspection**
(Figure 603, Figure 604)

A. **General**

(1) This procedure will inspect the internal and external areas of the wheel bearings.

B. **References**

Reference	Title
32-45-11-000-801	Main Landing Gear Wheel and Tire Assembly Removal (P/B 401)
32-45-11-400-801	Main Landing Gear Wheel and Tire Assembly Installation (P/B 401)
32-45-21-000-801	Nose Landing Gear Wheel and Tire Assembly - Removal (P/B 401)
32-45-21-400-801	Nose Landing Gear Wheel and Tire Assembly - Installation (P/B 401)

C. **Consumable Materials**

Reference	Description	Specification
D00233	Grease - Aircraft, General Purpose, Wide Temperature - Mobil 28	MIL-PRF-81322
D00378	Grease - Aircraft, General Purpose, Wide Temperature - Aeroshell 22	MIL-PRF-81322
D50005	Grease - Wheel Bearing - Mobil Aviation Grease SHC 100	
G00834	Cloth - Lint-free Cotton	
G50492	Pad - 3M Scotch Brite 7448 Ultra Fine Pad	MIL-A-9962A Type III Grade AAA
G51224	Pad - Abrasive, Scotch-Brite, Very Fine, Maroon 7447	A-A-58054 Type I Grade A

D. **Location Zones**

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

E. **Prepare for the Inspection**

SUBTASK 32-45-00-020-002

(1) If not previously done, perform the following tasks as applicable:

(a) For the Main Landing Gear: Main Landing Gear Wheel and Tire Assembly Removal, TASK 32-45-11-000-801.

(b) For the Nose Landing Gear: Nose Landing Gear Wheel and Tire Assembly - Removal, TASK 32-45-21-000-801.

F. **Wheel Bearings Inspection**

SUBTASK 32-45-00-020-003

(1) Remove the bearing cone from the bearing cup (Figure 603).

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SUBTASK 32-45-00-210-014

(2) Put the bearing cone in a clean area.

(a) Make sure that no unwanted materials get into the bearing cone while setting it aside.

SUBTASK 32-45-00-210-011

(3) Examine the internal and external surfaces of the bearing cup and cone for water or any other unwanted material in the grease.

(a) If water or unwanted material is found in the grease, remove and replace the entire wheel assembly.

NOTE: It is normal for the grease color to change from red or light brown to dark brown, gray, or black. Grease color is not a cause to reject unless the grease color is white. White color is an indication that grease contains unwanted water.

SUBTASK 32-45-00-210-012

(4) Examine the internal and external surfaces of the bearing cup and cone for any obvious signs of cracking, flat spots or damage.

(a) If cracking, flat spots or damage is found, remove and replace the entire wheel assembly, including the wheel bearing cone.

SUBTASK 32-45-00-100-001

(5) Wipe off the grease only from the cup race with a lint-free cloth, G00834.

(a) Remove only enough grease to get a clear view of bearing cup race surface.

(b) Do not use solvents to clean the bearing cup race surface.

SUBTASK 32-45-00-210-013

(6) Visually examine the cup race with a flashlight for marks, discoloration or corrosion. See (Figure 604) for examples of marks and discolorations.

(a) If no defects are found, do the steps:

1) Re-apply a thin layer of bearing grease Aeroshell 22 grease, D00378, Mobil 28 grease, D00233 or Mobil Aviation Grease SHC 100 grease, D50005 to the surface of the cup race.

2) Re-insert the wheel bearing cone into the bearing cup.

(b) If discoloration, texture or surface corrosion is found, attempt to remove it by gently using Scotch-Brite 7447 pad, G51224 or Scotch-Brite 7448 pad, G50492. Perform this task for no longer than 2 minutes.

1) Equivalent abrasive papers or cloths to the ones given inhere (with a grade between 600 to 1000) can be used instead.

2) Do not use wire metal brushes, rotary brushes or flappers of any kind to perform this task.

(c) After the area has been reworked, slowly slide a ball point pen, a non-metallic scraper/pick or a bare fingernail along the whole cup race surface to feel for abnormalities:

1) If texture is felt, remove and replace the entire wheel assembly including the wheel bearing cone.

2) If corrosion is still present, remove and replace the entire wheel assembly including the wheel bearing cone.

3) If no texture is felt, do the steps:

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a) Re-apply a thin layer of bearing grease Aeroshell 22 grease, D00378, Mobil 28 grease, D00233 or Mobil Aviation Grease SHC 100 grease, D50005 to the surface of the cup race.

b) Re-insert the wheel bearing cone into the bearing cup.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-45-00-840-002

(1) Do as applicable:

(a) For the Main Landing Gear: Main Landing Gear Wheel and Tire Assembly Installation, TASK 32-45-11-400-801.

(b) For the Nose Landing Gear: Nose Landing Gear Wheel and Tire Assembly - Installation, TASK 32-45-21-400-801.

——— END OF TASK ———

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Wheel Bearings Inspection
Figure 603/32-45-00-990-810

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE WHEEL BEARING CUP DISCOLORATION

MAIN WHEEL BEARING CUP DISCOLORATION

BEARING CUP MARKS

2934325 S0000710906_V1

Wheel Bearings Inspection
Figure 604/32-45-00-990-812

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TIRE INFLATION VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks for both the main and nose landing gear tires.

(1) Tire inflation valve removal.

(2) Tire inflation valve installation.

TASK 32-45-08-000-801

2. Tire Inflation Valve Removal

(Figure 401)

A. References

Reference	Title
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
12-15-51-610-802	Add Nitrogen or Air to the Tire (P/B 301)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1524	Deflator - Tire, Valve Core Removal and Installation (Large Bore) Part #: 320008A-SO Supplier: SFN11 Part #: 968RB-1 Supplier: 5W9Y4 Opt Part #: 320008A Supplier: SFN11
COM-4046	Deflator - Tire, Valve Core Removal and Installation (Small Bore) and Tire Deflation Part #: 320008B-SO Supplier: SFN11 Part #: 968RB Supplier: 5W9Y4 Opt Part #: 320008B Supplier: SFN11

C. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Tire Inflation Valve Removal

SUBTASK 32-45-08-420-001

(1) Install landing gear downlocks, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-45-08-420-002

(2) Install chocks around all tires (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-45-08-580-001

(3) Raise axle on jack so that there is clearance between the wheel and tire assembly and the ground, do these tasks:

- Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801,
- Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E, TASK 07-11-03-580-802.

SUBTASK 32-45-08-840-001

WARNING	MAKE SURE THAT YOU DEFLATE THE TIRE BEFORE YOU REMOVE THE VALVE. IF YOU DO NOT DEFLATE THE TIRE, VALVE PARTS CAN COME OUT OF THE VALVE AT A HIGH VELOCITY WHEN YOU TRY TO REMOVE THE VALVE. THIS CAN CAUSE INJURIES TO PERSONNEL.

WARNING	MAKE SURE THAT ALL PERSONNEL ARE CLEAR OF THE INFLATION VALVE ASSEMBLY PATH WHILE YOU REMOVE IT. IF THE INFLATION VALVE ASSEMBLY EJECTS WHILE YOU REMOVE IT, INJURY TO PERSONNEL CAN OCCUR.

WARNING	BE VERY CAREFUL WHEN DEFLATING TIRES TO PREVENT INJURY TO PERSONNEL FROM A FLYING INFLATION VALVE CAP AND/OR VALVE CORE.

CAUTION	MAKE SURE THAT THE DEFLATED TIRE THAT IS ON THE AXLE DOES NOT TOUCH THE GROUND. IF THE TIRE DOES TOUCH THE GROUND, THE TIRE'S BEAD SEAT CAN MOVE OUT OF ITS POSITION AND BECOME UNSEATED. THE UNSEATED BEAD SEAT CAN CAUSE LEAKAGE WHICH THEN CAN CAUSE DAMAGE TO THE TIRE AND WHEEL.

(4) Deflate the tire with small bore tire deflator, COM-4046 or large bore tire deflator, COM-1524, do this task: Add Nitrogen or Air to the Tire, TASK 12-15-51-610-802.

LOM 465-999

SUBTASK 32-45-08-020-002

(5) Remove the lockwire from the valve.

LOM ALL

SUBTASK 32-45-08-020-003

(6) Remove the valve from the wheel.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tire Inflation Valve
Figure 401/32-45-08-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tire Inflation Valve
Figure 401/32-45-08-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-45-08-400-801

3. Tire Inflation Valve Installation

(Figure 401)

A. References

Reference	Title
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
12-15-51-610-802	Add Nitrogen or Air to the Tire (P/B 301)

B. Tools/Equipment

Reference	Description
STD-7044	Wrench - Socket

C. Consumable Materials

Reference	Description	Specification
A50584	Adhesive - Threadlocking, Loctite 242 (Telair ES406-13)	ASTM D5363 Grp 3 Cl 2 Gd 1 (SUPERSEDES MIL-S-46163)
A50585	Adhesive - Threadlocking, Loctite 243 (Telair ES406-13)	
D00504	Grease - Petrolatum	VV-P-236
D50113	Grease - Silicone (PolySi Technologies Inc. - PST 525)	SAE AS8660 (Supercedes MIL-S-8660)
D50395	Vaseline - Mineral, Lubricating	AIR 3565
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Packing	32-45-11-15A-150	LOM 402, 406, 407, 412, 415, 420, 423, 424, 432, 437-439, 441, 458-460, 464
		32-45-11-15B-140	LOM 420, 438, 439, 441, 458-460, 464
		32-45-11-15D-015	LOM 420, 422, 425-431, 433, 434, 440, 442-447, 451-463
		32-45-21-02-045	LOM 404, 416, 450, 461-463, 465-999
		32-45-21-05-025	LOM 402, 406, 407, 411, 412, 415, 420, 423, 424, 426, 429-432, 437-439, 441, 458-460, 464
		32-45-21-06-030	LOM 422, 425, 427, 428, 433, 434, 440, 442-447, 451-457, 461-463

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(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Inflation valve	32-45-11-15-090	LOM 404, 411, 416, 450, 461-463, 465-999
		32-45-11-15A-130	LOM 402, 406, 407, 412, 415, 420, 423, 424, 432, 437-439, 441, 458-460, 464
		32-45-11-15B-120	LOM 420, 438, 439, 441, 458-460, 464
		32-45-11-15D-005	LOM 420, 422, 425-431, 433, 434, 440, 442-447, 451-463
		32-45-21-02-040	LOM 404, 416, 450, 461-463, 465-999
		32-45-21-05-005	LOM 402, 406, 407, 411, 412, 415, 420, 423, 424, 426, 429-432, 437-439, 441, 458-460, 464
		32-45-21-06-015	LOM 422, 425, 427, 428, 433, 434, 440, 442-447, 451-457, 461-463

E. Location Zones

Zone	Area
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Tire Inflation Valve Installation

SUBTASK 32-45-08-210-001

(1) Check port in wheel half for cracks, burrs, or scratches propagating from port.

(a) If cracks, burrs, or scratches are present, remove wheel and tire.

SUBTASK 32-45-08-420-003

(2) With a new or reusable packing [1], install the tire inflation valve [2] into the port.

(a) Install the inflation valve [2] to the main wheel assembly.

1) For the Goodrich main wheel assembly, do these steps:

a) Apply a thin layer of grease, D00504, for the orange or red packing [1] or PST 525 silicone grease, D50113, for the black packing [1].

b) Prevent contact packing [1] with the thread of the inflation valve [2].

c) Tighten the tire inflation valve [2] to 210 in-lb (23.7 N·m).

d) Install MS20995C32 lockwire, G01048, between the inflation valve [2] and the outer wheel.

2) For the Safran main wheel assembly, do these steps:

a) Apply a thin layer of vaseline, D50395, for the red packing [1], or PST 525 silicone grease, D50113, for the black packing [1].

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b) Apply Loctite 242 adhesive, A50584, or Loctite 243 adhesive, A50585, to the tire inflation valve [2] thread.

c) Prevent contact packing [1] with the thread of the inflation valve [2].

d) Tighten the tire inflation valve [2] to 182.7 in-lb (20.6 N·m) - 197.9 in-lb (22.4 N·m).

3) For the Honeywell main wheel assembly, do these steps:

a) Install the packing [1] on the inflation valve [2].

b) Tighten the tire inflation valve [2] to 150 in-lb (16.9 N·m) - 200 in-lb (22.6 N·m).

c) If it is necessary, install MS20995C32 lockwire, G01048.

(b) Install the inflation valve [2] to the nose wheel assembly.

1) For the Goodrich nose wheel assembly, do these steps:

a) Apply a thin layer of grease, D00504, for the orange or red packing [1], or PST 525 silicone grease, D50113, for the black packing [1].

b) Prevent contact packing [1] with the thread of the inflation valve [2].

c) Tighten the tire inflation valve [2] to 175 in-lb (19.8 N·m).

d) Install MS20995C32 lockwire, G01048, between the inflation valve [2] and lockwire anchor bolt.

2) For the Safran nose wheel assembly, do these steps:

a) Apply a thin layer of vaseline, D50395, for the red packing [1], or PST 525 silicone grease, D50113, for the black packing [1].

b) Prevent contact packing [1] with the thread of the inflation valve [2].

c) Tighten the tire inflation valve [2] to 143.4 in-lb (16.2 N·m) - 175.2 in-lb (19.8 N·m).

3) For the Honeywell nose wheel assembly, do these steps:

a) Install the packing [1] on the inflation valve [2].

b) Tighten the tire inflation valve [2] to 150 in-lb (17 N·m) - 200 in-lb (23 N·m).

c) If it is necessary, install MS20995C32 lockwire, G01048.

(c) If the main and nose wheel assemblies used the tire pressure sensor as an inflation valve [2], do these steps:

1) For the Goodrich wheel assembly, do these steps:

a) Apply a thin layer of grease, D00504, for the orange or red packing [1], or PST 525 silicone grease, D50113, for the black packing [1].

b) Prevent contact packing [1] with the thread of the inflation valve [2].

c) Use a socket wrench, STD-7044, to install the inflation valve [2] on the wheel.

d) Tighten the tire inflation valve [2] to 150 in-lb (16.9 N·m) - 200 in-lb (22.6 N·m).

e) Make sure that the red mark on the tire is aligned with the inflation valve [2].

NOTE: The red dot identifies the lightest area of the tire.

f) If it is necessary, install MS20995C32 lockwire, G01048, between the inflation valve [2] and the outboard wheel.

2) For the Safran wheel assembly, do these steps:

a) Apply a thin layer of vaseline, D50395, for the red packing [1], or PST 525 silicone grease, D50113, for the black packing [1].

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b) Apply Loctite 242 adhesive, A50584, or Loctite 243 adhesive, A50585, to the inflation valve [2] threads.

NOTE: It is necessary to install and tighten the inflation valve within 1 minute of the application of retaining compound. If it is tightened after 1 minute of the application of retaining compound, the bond of the retaining compound will not be satisfactory and inflation valve must be removed and installed again.

c) Do not let the primer or retaining compound touch the packing [1].

d) Use a socket wrench, STD-7044, to install the inflation valve [2] on the wheel.

e) Tighten the tire inflation valve [2] to 150 in-lb (16.9 N·m) - 200 in-lb (22.6 N·m).

<1> Make sure that the inflation valve [2] was tightened within 1 minute after application of compound.

f) Make sure that the red mark on the tire is aligned with the inflation valve [2].

NOTE: The red dot identifies the lightest area of the tire.

SUBTASK 32-45-08-580-002

(3) Inflate the tire (TASK 12-15-51-610-802).

G. Tire Inflation Valve Installation Test

SUBTASK 32-45-08-210-002

(1) Using bubble soap solution, check for leaks around base of the tire inflation valve [2].

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-45-08-580-003

(1) Lower aircraft (TASK 07-11-03-580-801, TASK 07-11-03-580-802).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL AND TIRE ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the main landing gear wheel and tire assembly.

(2) An installation of the main landing gear wheel and tire assembly.

TASK 32-45-11-000-801

2. Main Landing Gear Wheel and Tire Assembly Removal

(Figure 401 or Figure 402 or Figure 403)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
20-10-44-000-801	Lockwire, Cotter Pins, and Lockrings - Removal (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-45-00-700-801	Wheels Fast Check (Wheel Installed on the Airplane) (P/B 601)
32-45-00-700-803	Tires - Inspection (P/B 601)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1524	Deflator - Tire, Valve Core Removal and Installation (Large Bore) Part #: 320008A-SO Supplier: SFN11 Part #: 968RB-1 Supplier: 5W9Y4 Opt Part #: 320008A Supplier: SFN11
COM-1818	Dolly - Wheel/Brake Change Part #: 15F590 Supplier: 56535 Part #: 17500M Supplier: 94861 Part #: 175S-2 Supplier: 94861 Part #: 227A-JMS Supplier: CD856 Part #: 9092-016 Supplier: 00994 Part #: IA3201A-500 Supplier: 053H3 Part #: MH13-003 Supplier: D2029 Part #: SCA150KG Supplier: R9624 Part #: STC90475-101 Supplier: 07132 Opt Part #: 175M Supplier: 94861 Opt Part #: 8436-012 Supplier: 00994 Opt Part #: 9092-010 Supplier: 00994 Opt Part #: 9092-015 Supplier: 00994 Opt Part #: PF32-002-1 Supplier: 3D5B2 Opt Part #: TB900 Supplier: 56535

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(Continued)

Reference	Description
COM-4046	Deflator - Tire, Valve Core Removal and Installation (Small Bore) and Tire Deflation Part #: 320008B-SO Supplier: SFN11 Part #: 968RB Supplier: 5W9Y4 Opt Part #: 320008B Supplier: SFN11
SPL-1865	Removal/Installation Equipment - Retention Nut, Wheel MLG and NLG Part #: C32012-12 Supplier: 81205 Opt Part #: 1922 Supplier: 45225 Opt Part #: F80168-1 Supplier: 81205
SPL-1876	Thread Protector Equipment - Axle, MLG Part #: C32022-38 Supplier: 81205 Opt Part #: C32022-15 Supplier: 81205 Opt Part #: C32022-17 Supplier: 81205 Opt Part #: C32022-23 Supplier: 81205
SPL-14320	Thread Protector Eqpt - MLG Axle (1/8 inch undersized threads) Part #: C32022-39 Supplier: 81205 Opt Part #: C32022-32 Supplier: 81205

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-45-11-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-45-11-480-002

(2) Make sure that the tires have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-45-11-860-001

(3) Make sure that the parking brake is released.

SUBTASK 32-45-11-580-001

(4) Lift the wheel and tire assemblies with jacks until they are clear of the ground, do this task: Lift the Main Landing Gear Axles with the Axle Jacks, TASK 07-11-03-580-801.

SUBTASK 32-45-11-860-002

(5) Make sure that the parking brake is set.

NOTE: When you set the parking brake, the brake rotors will be aligned for wheel installation.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-45-11-840-001

WARNING

FULLY DEFLATE THE TIRE BEFORE YOU REMOVE THE WHEEL AND TIRE ASSEMBLY. OR, DO AN INSPECTION OF THE WHEEL AND TIRE TO MAKE SURE THAT THEY ARE SAFE. AIR PRESSURE CAN CAUSE AN EXPLOSION OF THE DAMAGED WHEEL AND TIRE COMPONENTS. INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

WARNING

REMOVE ONLY ONE WHEEL AND TIRE ASSEMBLY FROM THE MAIN LANDING GEAR AT A TIME. IF YOU REMOVE THE TWO WHEEL AND TIRE ASSEMBLIES AT THE SAME TIME, STRUCTURAL DAMAGE AND INJURY TO PERSONS CAN OCCUR IF THE AIRPLANE FALLS.

(6) Do the following steps to examine the tire and wheel assembly to see if it is safe to remove without tire deflation, or deflate the tire:

NOTE: If you will not install the same wheel and tire assembly, deflate the tire to prevent transporting an inflated tire.

(a) Inspect the outboard wheel and tire assembly [1] and/or the inboard wheel and tire assembly [17] to see if it has the conditions that follow:

1) Inspect the tires and make sure that there are no air leaks, abrasions, unusual worn areas, cuts or flat spots, do this task: Tires - Inspection, TASK 32-45-00-700-803.

2) Inspect the wheels and make sure that there is no evidence of wheel damage, including corrosion, loose or damaged or missing tire bolts or tire nuts, overheat damage or cracks, do this task: Wheels Fast Check (Wheel Installed on the Airplane), TASK 32-45-00-700-801.

3) If the wheel and tire assembly has any of the conditions in the above steps, you must deflate the tire.

WARNING

MAKE SURE THAT ALL PERSONNEL ARE CLEAR OF THE INFLATION VALVE ASSEMBLY PATH WHILE YOU REMOVE IT. IF THE INFLATION VALVE ASSEMBLY EJECTS WHILE YOU REMOVE IT, INJURY TO PERSONNEL CAN OCCUR.

CAUTION

MAKE SURE THAT THE DEFLATED TIRE THAT IS ON THE AXLE DOES NOT TOUCH THE GROUND. IF THE TIRE DOES TOUCH THE GROUND, THE TIRE'S BEAD SEAT CAN MOVE OUT OF ITS POSITION AND BECOME UNSEATED. THE UNSEATED BEAD SEAT CAN CAUSE LEAKAGE WHICH THEN CAN CAUSE DAMAGE TO THE TIRE AND WHEEL.

CAUTION

DO NOT USE TOO MUCH FORCE ON THE VALVE CORE. THE CORE PARTS CAN MOVE AND THE SLEEVE AND THE LOWER END OF THE POPPET WILL STAY IN THE VALVE STEM. IF PARTS STAY IN THE VALVE STEM, DAMAGE CAN OCCUR TO THE VALVE STEM.

(b) Deflate the tire with the small bore tire deflator, COM-4046, or large bore tire deflator, COM-1524.

NOTE: If the wheel and tire are not damaged, it is acceptable to leave approximately 50 psi (345 kPa) or 25% of the service pressure in the tire while deflating. Leaving approximately 50 psi (345 kPa) or 25% of the service pressure in the tire can prevent damage to the tire when the wheel and tire are transported.

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(c) If you cannot use the usual procedure to deflate the tire because the valve core is damaged, do these steps:

1) Turn the valve assembly slowly in a counterclockwise direction until there is gas leakage through the boss.

2) At the same time, push lightly on the valve assembly.

3) After all of the gas has been released, remove the valve assembly from the tire.

E. Main Landing Gear Wheel and Tire Assembly Removal

SUBTASK 32-45-11-020-001

(1) Remove the hubcap [3] from the outboard wheel and tire assembly [1] or hubcap [18] from the inboard wheel and tire assembly [17], do these steps for the applicable wheel:

(a) For the outboard wheel and tire assembly [1], turn the cam-locs [4] 1/4 turn to disconnect the hubcap fairing [5] from the hubcap [3].

(b) Remove the lockwire from the bolts [6] (TASK 20-10-44-000-801).

(c) Remove the bolts [6] and washers [7] to disconnect the hubcap from the wheel.

(d) Remove the hubcap from the wheel.

SUBTASK 32-45-11-020-002

(2) Remove the outboard wheel and tire assembly [1] or inboard wheel and tire assembly [17], do these steps for the applicable wheel:

(a) Remove the nuts [8], washers [9], and bolts [10] that hold the axle nut [16] to the axle.

WARNING DO NOT PUT FINGERS IN THE LIGHTENING HOLES OF THE WHEEL RETAINING NUT SOCKET TOOL WHEN YOU REMOVE OR INSTALL THE WHEEL RETAINING NUT. THIS CAN CAUSE INJURIES TO PERSONS.

(b) Remove the nut [16] with the socket, SPL-1865.

(c) Remove the retention washer [15].

(d) Install the thread protector assembly, of the thread protector, SPL-1876, or the thread protector, SPL-14320, (for undersized threads) on the axle threads.

Table 401/32-45-11-993-801 Main Landing Gear (MLG) - Thread Protector for Kit C32022*

Optional Part # (Kit)	Actual Tool #
C32022-15	C32022-16
C32022-17	C32022-18
C32022-23	C32022-26
C32022-32	C32022-33
C32022-38	C32022-40
C32022-39	C32022-42

(e) Use the wheel/brake changer dolly, COM-1818, to lift and remove the wheel and tire assembly [1].

(f) Mark the reason for the tire removal on the tire to aid the inspectors when they examine the tire.

(g) Remove the wheel and tire assembly.

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(h) Install the axle protector assembly, of the thread protector, SPL-1876, on the axle.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Wheel and Tire Assembly Installation
Figure 401/32-45-11-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Wheel and Tire Assembly Installation
Figure 401/32-45-11-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1898651 S0000349261_V2

Main Landing Gear Wheel and Tire Assembly Installation
Figure 401/32-45-11-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 **WARNING:**

DO NOT PUT FINGERS IN THE LIGHTENING HOLES.

1448082 S0000262835_V4

Main Landing Gear Axle Nut Socket Tool
Figure 402/32-45-11-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Wheel for Carbon Brakes
Figure 403/32-45-11-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-45-11-400-801

3. Main Landing Gear Wheel and Tire Assembly Installation

(Figure 401 or Figure 402 or Figure 403)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task gives the instructions to install the main landing gear wheel and tire assembly.

(2) Bias ply tires must not be used on the same axle as radial ply tires.

B. References

Reference	Title
07-11-03-580-801	Lift the Main Landing Gear Axles with the Axle Jacks (P/B 201)
12-15-51-780-801	Landing Gear Tire Pressure Check and Tire Servicing (P/B 301)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
20-50-11-910-801	Standard Torque Values (P/B 201)
32-41-41-700-803	Main Landing Gear Brake Check (Wheel Removed from the Airplane) (P/B 601)
32-45-00-700-803	Tires - Inspection (P/B 601)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1818	Dolly - Wheel/Brake Change Part #: 15F590 Supplier: 56535 Part #: 17500M Supplier: 94861 Part #: 175S-2 Supplier: 94861 Part #: 227A-JMS Supplier: CD856 Part #: 9092-016 Supplier: 00994 Part #: IA3201A-500 Supplier: 053H3 Part #: MH13-003 Supplier: D2029 Part #: SCA150KG Supplier: R9624 Part #: STC90475-101 Supplier: 07132 Opt Part #: 175M Supplier: 94861 Opt Part #: 8436-012 Supplier: 00994 Opt Part #: 9092-010 Supplier: 00994 Opt Part #: 9092-015 Supplier: 00994 Opt Part #: PF32-002-1 Supplier: 3D5B2 Opt Part #: TB900 Supplier: 56535
SPL-1865	Removal/Installation Equipment - Retention Nut, Wheel MLG and NLG Part #: C32012-12 Supplier: 81205 Opt Part #: 1922 Supplier: 45225 Opt Part #: F80168-1 Supplier: 81205
SPL-1876	Thread Protector Equipment - Axle, MLG Part #: C32022-38 Supplier: 81205 Opt Part #: C32022-15 Supplier: 81205 Opt Part #: C32022-17 Supplier: 81205 Opt Part #: C32022-23 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
SPL-14320	Thread Protector Eqpt - MLG Axle (1/8 inch undersized threads) Part #: C32022-39 Supplier: 81205 Opt Part #: C32022-32 Supplier: 81205
STD-1021	Wrench - Torque, 100 to 600 ft-lbs

D. Consumable Materials

Reference	Description	Specification
D00233	Grease - Aircraft, General Purpose, Wide Temperature - Mobil 28	MIL-PRF-81322
D00378	Grease - Aircraft, General Purpose, Wide Temperature - Aeroshell 22	MIL-PRF-81322
D50005	Grease - Wheel Bearing - Mobil Aviation Grease SHC 100	

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Wheel and tire assembly	32-45-11-01-010	LOM 402, 406, 407, 411, 412, 415, 420, 423, 424, 426, 429-432, 437-439, 441, 458-460, 464
		32-45-11-02-010	LOM 404, 416, 422, 425, 427, 428, 433, 434, 440, 442-447, 450-457, 461-463, 465-999

F. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

G. Prepare for the Installation

SUBTASK 32-45-11-840-003

(1) Do these steps to prepare for installation:

(a) Remove the axle protector assembly, of the thread protector, SPL-1876, from the axle.

(b) Remove all the old grease from the axle.

(c) Remove all the old grease from the inner diameter of the brake.

> **WARNING** MAKE SURE THAT CORRECT PERSONAL PROTECTIVE EQUIPMENT IS USED FOR EYES DURING INSTALLATION AND REMOVAL OF THE BRAKE ASSEMBLY. IF CORRECT PERSONAL PROTECTIVE EQUIPMENT IS NOT USED BRAKE DUST CAN CAUSE INJURIES TO PERSON.

(d) Do an inspection of the brake.

NOTE: Do this inspection with special attention to the whole circumference of each rotor for the signs of a broken rotor drive clip(s).

1) Do this task: Main Landing Gear Brake Check (Wheel Removed from the Airplane), TASK 32-41-41-700-803.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(e) Do an inspection of the axle.

(f) Examine the antiskid transducer drive components in the axle and hubcap [3], and hubcap [18] for damage.

(g) If the wheel is not new, inspect the bearings, seals, and other parts of the wheel assembly.

(h) If the tire is not new, do a tire inspection.

1) Do this task: Tires - Inspection, TASK 32-45-00-700-803.

(i) If it is necessary to install the wheel inboard and outboard bearing assemblies, do these steps:

1) Apply Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, to all of the parts of the bearing assemblies.

CAUTION MAKE SURE THE CORRECT BEARING IS INSTALLED IN THE OUTSIDE OF THE WHEEL. INSTALLATION OF THE INNER BEARING IN THE OUTER BEARING WHEEL LOCATION CAN CAUSE WHEEL DAMAGE.

2) Install the inner bearing [12] in the inner side of the wheel and the outer bearing [13] in the outer side of the wheel.

CAUTION INSTALL THE CORRECT GREASE SEAL IN THE EXTERNAL PART OF THE WHEEL. INSTALLATION OF THE INNER GREASE SEAL IN THE OUTER GREASE SEAL WHEEL LOCATION CAN CAUSE SEAL DAMAGE.

3) Install the grease seal [11] in the inner side of the wheel and the grease seal [14] in the outer side of the wheel.

4) If part of the assembly, install the retaining ring [19] in the inner side of the wheel and the retaining ring [20] in the outer side of the wheel.

NOTE: Some wheel assemblies may not have the retaining rings as part of the configuration, or they may look different from those illustrated.

H. Main Landing Gear Wheel and Tire Assembly Installation

SUBTASK 32-45-11-420-001

(1) Do these steps to install the wheel and tire assembly [1]:

CAUTION DO NOT APPLY GREASE TO THE AREA BETWEEN THE AXLE BEARINGS. HIGH TEMPERATURES IN THIS AREA DURING A LANDING CAN CAUSE ALL GREASE IN THIS AREA TO BURN. THIS CAN CAUSE DAMAGE TO WHEELS, TIRES, AND BRAKES.

(a) Apply a thin layer of Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, to the inner diameter surface of the two bearings where they will touch the axle.

(b) Apply a thin layer of Aeroshell 22 grease, D00378, Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, to the faces of the washer [15] and nut [16], and to the axle threads.

(c) Apply a thin layer of Aeroshell 22 grease, D00378, Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, on the axle where the axle will touch the wheel bearings.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING MAKE SURE THAT CORRECT PERSONAL PROTECTIVE EQUIPMENT IS USED FOR EYES DURING INSTALLATION AND REMOVAL OF THE BRAKE ASSEMBLY. IF CORRECT PERSONAL PROTECTIVE EQUIPMENT IS NOT USED BRAKE DUST CAN CAUSE INJURIES TO PERSON.

(d) If you need to align the brake disks, do these steps:

1) Release the parking brake.

CAUTION MAKE SURE THE BRAKE ROTORS ARE ALIGNED. DAMAGE TO THE ROTORS CAN OCCUR IF THE DRIVE KEYS ON THE WHEEL HIT ROTORS DURING INSTALLATION.

2) Align the brake disks.

3) Set the parking brake.

NOTE: This will keep the brake rotors aligned.

(e) Make sure that the thread protector assembly, of the thread protector, SPL-1876, or thread protector, SPL-14320, (for undersized threads) is installed.

(f) Install the wheel and tire assembly [1] with the wheel/brake changer dolly, COM-1818.

1) Make sure that the rotor drive keys on the wheel fully engage the key slots in the brake rotors.

(g) Remove the thread protector assembly, of the thread protector, SPL-1876, or thread protector, SPL-14320, (for undersized threads) from the axle threads.

CAUTION MAKE SURE YOU FIRMLY PUSH BOTH THE WHEEL AND LOCK WASHER ALL THE WAY ONTO THE AXLE UNTIL THE WHEEL IS SEATED PRIOR TO INSTALLING AND TIGHTENING THE AXLE NUT. MAKE SURE THAT THE LOCKTANG IS FIRMLY ENGAGED IN THE KEYWAY GROOVE IN THE AXLE. DO NOT USE THE AXLE NUT TO PUSH THE WHEEL AND LOCK WASHER INTO POSITION. FAILURE TO FOLLOW THIS CAN CAUSE THE WHEEL TO BE LOOSE AND CAUSE DAMAGE TO THE EQUIPMENT.

(h) Install the washer [15].

(i) Install the nut [16].

(j) Release the parking brake.

WARNING DO NOT PUT FINGERS IN THE LIGHTENING HOLES OF THE WHEEL RETAINING NUT SOCKET TOOL WHEN YOU REMOVE OR INSTALL THE WHEEL RETAINING NUT. THIS CAN CAUSE INJURIES TO PERSONS.

(k) Do these steps to tighten the nut [16] with the socket, SPL-1865, and torque wrench, STD-1021:

1) While you turn the wheel, tighten the nut [16] to 500 ft-lb (678 N·m) - 600 ft-lb (813 N·m).

2) Stop the wheel.

3) While you turn the wheel, loosen the nut [16] to almost zero torque.

NOTE: The function is to keep the bearing seated.

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a) If the nut [16] is set to zero torque, re-seat the wheel.

4) While you turn the wheel, tighten the nut [16] to 150 ft-lb (203 N·m).

5) If the holes for bolt [10] do not align, continue to tighten the nut [16] to align the holes.

a) Do not tighten the nut [16] to more than 300 ft-lb (407 N·m).

NOTE: The holes will align every 6 degrees that you turn the nut.

(l) Do these steps to install the two bolts [10] to lock the nut [16] to the wheel and tire assembly [1]:

1) Install the two bolts [10] with the heads to the inside of the axle.

2) Install the washers [9] and nuts [8].

3) Check the self locking nuts (TASK 20-50-11-910-801).

4) Tighten the nuts [8] to 65 ±2 in-lb (7.3 ±0.2 N·m).

NOTE: This is per Standard Torque Values, TASK 20-50-11-910-801 to have the lowest maximum value when both nuts and the bolts can be tightened.

SUBTASK 32-45-11-420-002

CAUTION	DO NOT TIGHTEN THE HUBCAP BOLTS TOO MUCH. MAKE SURE THAT THE HUBCAP IS IN THE CORRECT POSITION BEFORE YOU TIGHTEN THE BOLTS. TOO MUCH TORQUE WILL CAUSE DAMAGE TO THE BOLTS AND THE HUBCAP.

(2) Install the hubcap [3] and hubcap [18].

(a) Do these steps to install the hubcap [3]:

1) Turn the antiskid transducer dog [2] inside the wheel and tire assembly [1] such that the drive on the hubcap [3] and antiskid transducer dog [2] in the wheel will connect when the hubcap [3] is installed.

2) Put the hubcap [3] in its position on the wheel and tire assembly [1].

3) Make sure that the hubcap [3] flush with the wheel and tire assembly [1].

a) Use a soft mallet to lightly tap the hubcap [3] to make it flush.

4) Install the bolts [6] and washers [7] to connect the hubcap [3] to the wheel and tire assembly [1].

a) Tighten the bolts [6] to 50 in-lb (5.65 N·m) - 80 in-lb (9.04 N·m).

5) Install the lockwire on the bolts [6] (TASK 20-10-44-400-801).

NOTE: The installation of the lockwire is acceptable on the fasteners that are over 6 in. (15 cm) apart at this location.

6) Put the hubcap fairing [5] on the hubcap [3].

7) Turn the cam-locs [4], 1/4 turn to attach the hubcap fairing [5] to the hubcap [3].

(b) Do these steps to install the hubcap [18]:

1) Turn the antiskid transducer dog [2] inside the inboard wheel and tire assembly [17] such that the drive on the hubcap [18], and the antiskid transducer dog [2] in the wheel will connect when the hubcap [18] is installed.

2) Put the hubcap [18] in its position on the inboard wheel and tire assembly [17].

3) Make sure that the hubcap [18] flush with the inboard wheel and tire assembly [17].

a) Use a soft mallet to lightly tap the hubcap [18] to make it flush.

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4) Install the bolts [6] and washers [7] to connect the hubcap [18] to the inboard wheel and tire assembly [17].
   a) Tighten the bolts [6] to 50 in-lb (5.65 N·m) - 80 in-lb (9.04 N·m).
5) Install the lockwire on the bolts [6] (TASK 20-10-44-400-801).

SUBTASK 32-45-11-860-003

(3) Make sure that the tire is inflated to at least half of the normal inflation pressure before the jacks removal (TASK 12-15-51-780-801).

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-45-11-580-002

WARNING

MAKE SURE THE AREA AROUND THE TIRES IS CLEAR OF PERSONS AND EQUIPMENT. IF THE AREA AROUND THE TIRES IS NOT CLEAR, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Lower the axle and remove the jacks (TASK 07-11-03-580-801).

SUBTASK 32-45-11-610-002

(2) Make sure that the Landing Gear Tire Pressure is within the servicing limits (TASK 12-15-51-780-801).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL AND TIRE ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the nose landing gear wheel and tire assembly

(2) An installation of the nose landing gear wheel and tire assembly.

B. When a replacement of the nose wheel and tire assembly is accomplished, it is recommended to replace the wheel and tire assembly on the opposite side. The differences in diameter between the new and worn tires can contribute to the nose landing gear vibration. To prevent the nose landing gear vibration, the installed tires should have equal pressure, nearly the same inflated diameters, and matching supplier part numbers.

TASK 32-45-21-000-801

2. Nose Landing Gear Wheel and Tire Assembly - Removal

(Figure 401, Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-45-00-000-801	Tires and Wheels - Deflation/Inflation (P/B 201)
32-45-00-700-801	Wheels Fast Check (Wheel Installed on the Airplane) (P/B 601)
32-45-00-700-803	Tires - Inspection (P/B 601)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1505	Chocks - Wheel Part #: 19CAL455 - Type 1 Supplier: $1329 Part #: 99-9028-6000 Supplier: 59603 Part #: AC6820-LR Supplier: 032T9 Part #: ALPHACHOCKS MAX Supplier: 6X2T3 Part #: W86 Supplier: 3XZM7 Part #: W88-RH Supplier: 3XZM7 Opt Part #: W88 Supplier: 3XZM7 Opt Part #: W92 Supplier: 9L752
COM-1524	Deflator - Tire, Valve Core Removal and Installation (Large Bore) Part #: 320008A-SO Supplier: SFN11 Part #: 968RB-1 Supplier: 5W9Y4 Opt Part #: 320008A Supplier: SFN11

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(Continued)

Reference	Description
COM-1818	Dolly - Wheel/Brake Change Part #: 15F590 Supplier: 56535 Part #: 17500M Supplier: 94861 Part #: 175S-2 Supplier: 94861 Part #: 227A-JMS Supplier: CD856 Part #: 9092-016 Supplier: 00994 Part #: IA3201A-500 Supplier: 053H3 Part #: MH13-003 Supplier: D2029 Part #: SCA150KG Supplier: R9624 Part #: STC90475-101 Supplier: 07132 Opt Part #: 175M Supplier: 94861 Opt Part #: 8436-012 Supplier: 00994 Opt Part #: 9092-010 Supplier: 00994 Opt Part #: 9092-015 Supplier: 00994 Opt Part #: PF32-002-1 Supplier: 3D5B2 Opt Part #: TB900 Supplier: 56535
COM-4046	Deflator - Tire, Valve Core Removal and Installation (Small Bore) and Tire Deflation Part #: 320008B-SO Supplier: SFN11 Part #: 968RB Supplier: 5W9Y4 Opt Part #: 320008B Supplier: SFN11
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1817	Socket, C32012-3 (included in C32012 Equipment) Part #: C32012-12 Supplier: 81205
SPL-1865	Removal/Installation Equipment - Retention Nut, Wheel MLG and NLG Part #: C32012-12 Supplier: 81205 Opt Part #: 1922 Supplier: 45225 Opt Part #: F80168-1 Supplier: 81205
SPL-1877	Thread Protector Equipment - Axle, NLG Part #: C32022-20 Supplier: 81205 Opt Part #: C32022-2 Supplier: 81205
SPL-1880	Downlock Equipment - NLG and MLG Part #: C32026-15 Supplier: 81205 Opt Part #: C32026-1 Supplier: 81205 Opt Part #: C32026-6 Supplier: 81205
SPL-14582	Thread Protector Eqpt - NLG Axle (1/16" undersized threads) Part #: C32022-35 Supplier: 81205

C. Location Zones

Zone	Area
713	Nose Landing Gear

D. Prepare for the Removal

SUBTASK 32-45-21-860-002

(1) Make sure that the parking brake is set.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-45-21-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(2) Make sure that the landing gear downlock downlock equipment, SPL-1880, and NLG towing lever pin, SPL-1499, are installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-45-21-480-002

(3) Make sure that the tires of Main Landing Gear (MLG) have wheel chock, COM-1505, installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-45-21-580-001

(4) Make sure that to lift the nose landing gear and wheel and tire assembly with jacks until they are clear of the ground (TASK 07-11-03-580-802).

SUBTASK 32-45-21-840-001

> **WARNING** FULLY DEFLATE THE TIRE BEFORE YOU REMOVE THE WHEEL AND TIRE ASSEMBLY. OR, DO AN INSPECTION OF THE WHEEL AND TIRE TO MAKE SURE THAT THEY ARE SAFE. AIR PRESSURE CAN CAUSE AN EXPLOSION OF THE DAMAGED WHEEL AND TIRE COMPONENTS. INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

> **WARNING** REMOVE ONE WHEEL AND THE TIRE ASSEMBLY FROM THE NOSE LANDING GEAR AT A TIME. IF YOU REMOVE THE TWO WHEEL AND THE TIRE ASSEMBLIES AT THE SAME TIME, THE AIRPLANE CAN FALL. STRUCTURAL DAMAGE AND INJURY TO PERSONNEL CAN OCCUR.

(5) Do the following steps to examine the tire and wheel assembly to see if it is safe to remove without tire deflation, or deflate the tire (TASK 32-45-00-000-801):

NOTE: If you will not install the same tire and wheel assembly, deflate the tire to prevent transporting an inflated tire.

(a) Inspect the wheel and tire assembly [1] to see if it has the conditions that follow:

1) Inspect the tires and make sure that there are no air leaks, abrasions, unusual worn areas, cuts or flat spots, do this task: Tires - Inspection, TASK 32-45-00-700-803.

2) Inspect the wheels and make sure that there is no evidence of wheel damage, including corrosion, loose or damaged or missing tie bolts or tie nuts, overheat damage or cracks, do this task: Wheels Fast Check (Wheel Installed on the Airplane), TASK 32-45-00-700-801.

NOTE: If the wheel and tire assembly has any of the conditions in the above steps, you must deflate the tire.

> **WARNING** MAKE SURE THAT ALL PERSONNEL ARE CLEAR OF THE INFLATION VALVE ASSEMBLY PATH WHILE YOU REMOVE IT. IF THE INFLATION VALVE ASSEMBLY EJECTS WHILE YOU REMOVE IT, INJURY TO PERSONNEL CAN OCCUR.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

> **WARNING** BE CAREFUL WHEN DEFLATING TIRES, A FLYING INFLATION VALVE CAP AND CORE CAN CAUSE DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL.

> **CAUTION** MAKE SURE THAT THE DEFLATED TIRE THAT IS ON THE AXLE DOES NOT TOUCH THE GROUND. IF THE TIRE DOES TOUCH THE GROUND, THE TIRE'S BEAD SEAT CAN MOVE OUT OF ITS POSITION AND BECOME UNSEATED. THE UNSEATED BEAD SEAT CAN CAUSE LEAKAGE WHICH THEN CAN CAUSE DAMAGE TO THE TIRE AND WHEEL.

(b) Deflate the tire with the small bore tire deflator, COM-4046, or large bore tire deflator, COM-1524.

NOTE: If the wheel and tire are not damaged, it is acceptable to leave approximately 50 psi (345 kPa) or 25% of the service pressure in the tire while deflating. Leaving approximately 50 psi (345 kPa) or 25% of the service pressure in the tire can prevent damage to the tire when the wheel and tire is transported.

(c) If you cannot use the usual procedure to deflate the tire because the valve core is damaged, do these steps:

1) Turn the valve assembly slowly in a counterclockwise direction until there is gas leakage through the boss.
2) At the same time, push lightly on the valve assembly.
3) After all of the gas has been released, remove the valve assembly from the tire.

E. Nose Landing Gear Wheel and Tire Assembly Removal

SUBTASK 32-45-21-020-001

(1) Do these steps to remove the wheel and tire assembly [1]:

(a) Remove the lockwire from the screws [4].

(b) Remove the screws [4] that hold the axle nut [3] to the axle.

(c) Remove the axle nut [3] with the NLG socket, C32012-3, SPL-1817, from kit socket, SPL-1865.

(d) Remove the washer [2].

> **CAUTION** MAKE SURE THAT THE AXLE THREAD PROTECTOR IS INSTALLED BEFORE YOU REMOVE THE WHEEL/TIRE ASSEMBLY. IF YOU REMOVE THE TIRE ASSEMBLY WITHOUT THE AXLE THREAD PROTECTOR INSTALLED, DAMAGE TO THE THREADS OR THE TIRE ASSEMBLY CAN OCCUR.

I (e) Install the thread protector assembly, of the thread protector, SPL-1877, on the axle threads.

NOTE: You can use tape to hold the thread protector to the axle if it is necessary.

Table 401/32-45-21-993-801 Nose Landing Gear (NLG) - Thread Protector for Kit C32022-20

Optional Part # (Kit)	Actual Tool #
C32022-35	C32022-36

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 401/32-45-21-993-801 Nose Landing Gear (NLG) - Thread Protector for Kit C32022-20 (Continued)

Optional Part # (Kit)	Actual Tool #
C32022-20	C32022-21
C32022-2	C32022-5

(f) If the axle has undersized threads, install the thread protector, SPL-14582, on the axle threads.

NOTE: You can use tape to hold the thread protector to the axle.

CAUTION MAKE SURE TO KEEP CLEARANCE BETWEEN THE NOSE-WHEEL INNER BEARING AND PAINTED SURFACES OF THE NOSE GEAR AXLE DURING REMOVAL AND INSTALLATION. FRICTION CAN CAUSE DAMAGE TO NOSE-WHEEL AXLE PAINT AND OTHER EQUIPMENT.

(g) Use the wheel/brake changer dolly, COM-1818, to lift and remove the wheel and tire assembly [1].

(h) Remove the wheel and tire assembly [1].

(i) Mark the reason for the tire removal on the tire to aid the inspectors when they examine the tire.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL AND TIRE (EXAMPLE)

A

1 SPACERS WITH SIX HOLES USE LOCKWIRE

F93331 S0006575680_V4

Nose Landing Gear Wheel and Tire Assemblies Installation
Figure 401/32-45-21-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL ASSEMBLY

B

NOTE:

RETAINING RINGS CAN LOOK DIFFERENT.

F93334 S0006575681_V2

Nose Landing Gear Wheel and Tire Assemblies Installation
Figure 401/32-45-21-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 SPACERS WITH SIX HOLES USE LOCKWIRE

2069217 S0000430728_V5

Nose Landing Gear Wheel and Tire Assemblies Installation
Figure 401/32-45-21-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1499516 S0000272625_V5

Nose Landing Gear Axle Nut Socket Tool
Figure 402/32-45-21-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-45-21-400-801

3. Nose Landing Gear Wheel and Tire Assembly - Installation

(Figure 401, Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task gives the instructions to install the nose landing gear wheel and tire assembly.

(2) Bias ply tires must not be used on the same axle as radial ply tires.

B. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
12-15-51-780-801	Landing Gear Tire Pressure Check and Tire Servicing (P/B 301)
32-21-71-200-803	Nose Gear Axle Detailed Inspection for Corrosion (P/B 601)
32-45-00-700-803	Tires - Inspection (P/B 601)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1818	Dolly - Wheel/Brake Change Part #: 15F590 Supplier: 56535 Part #: 17500M Supplier: 94861 Part #: 175S-2 Supplier: 94861 Part #: 227A-JMS Supplier: CD856 Part #: 9092-016 Supplier: 00994 Part #: IA3201A-500 Supplier: 053H3 Part #: MH13-003 Supplier: D2029 Part #: SCA150KG Supplier: R9624 Part #: STC90475-101 Supplier: 07132 Opt Part #: 175M Supplier: 94861 Opt Part #: 8436-012 Supplier: 00994 Opt Part #: 9092-010 Supplier: 00994 Opt Part #: 9092-015 Supplier: 00994 Opt Part #: PF32-002-1 Supplier: 3D5B2 Opt Part #: TB900 Supplier: 56535
SPL-1817	Socket, C32012-3 (included in C32012 Equipment) Part #: C32012-12 Supplier: 81205
SPL-1865	Removal/Installation Equipment - Retention Nut, Wheel MLG and NLG Part #: C32012-12 Supplier: 81205 Opt Part #: 1922 Supplier: 45225 Opt Part #: F80168-1 Supplier: 81205
SPL-1877	Thread Protector Equipment - Axle, NLG Part #: C32022-20 Supplier: 81205 Opt Part #: C32022-2 Supplier: 81205
SPL-14582	Thread Protector Eqpt - NLG Axle (1/16" undersized threads) Part #: C32022-35 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Consumable Materials

Reference	Description	Specification
D00233	Grease - Aircraft, General Purpose, Wide Temperature - Mobil 28	MIL-PRF-81322
D00378	Grease - Aircraft, General Purpose, Wide Temperature - Aeroshell 22	MIL-PRF-81322
D50005	Grease - Wheel Bearing - Mobil Aviation Grease SHC 100	
G00440	Lockwire - MS20995C41, Corrosion Resistant Steel - 0.041 Inch (1.0414 mm) Diameter	NASM20995
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50177	Lockwire - MS20995N32, Inconel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50347	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Wheel and tire assembly	32-45-21-01-005	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-444, 446, 447, 450-999
		32-45-21-04-005	LOM 445

F. Location Zones

Zone	Area
713	Nose Landing Gear

G. Prepare for the Installation

SUBTASK 32-45-21-000-002

(1) Do these steps to prepare for installation:

(a) Remove the axle thread thread protector, SPL-1877, or thread protector, SPL-14582, from the axle.

(b) Remove all the old grease from the axle.

(c) If the wheel is not new, inspect the bearings, seals, and other parts of the wheel assembly.

(d) If the tire is not new, do a tire inspection (TASK 32-45-00-700-803).

(e) Do these steps if the component of the nose wheel assembly (the bearings, the seals, and other parts) need to be installed:

1) Apply Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, to the inner bearing [8], outer bearing [9], grease seal [7] and grease seal [10].

CAUTION MAKE SURE THE CORRECT BEARING IS INSTALLED IN THE OUTSIDE OF THE WHEEL. INSTALLATION OF THE INNER BEARING IN THE OUTER BEARING WHEEL LOCATION CAN CAUSE WHEEL DAMAGE.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(CAUTION PRECEDES)

> **CAUTION** MAKE SURE TO KEEP CLEARANCE BETWEEN THE NOSE-WHEEL INNER BEARING AND PAINTED SURFACES OF THE NOSE GEAR AXLE DURING REMOVAL AND INSTALLATION. FRICTION CAN CAUSE DAMAGE TO NOSE-WHEEL AXLE PAINT AND OTHER EQUIPMENT.

2) Install the inner bearing [8] on the inner side of the wheel and the outer bearing [9] on the outer side of the wheel.
   a) Make sure that the inner bearing is installed on the wheel side opposite inflation valve.

> **CAUTION** MAKE SURE THAT YOU INSTALL THE CORRECT GREASE SEAL IN THE OUTER SIDE OF THE WHEEL. IF YOU INSTALL THE INNER GREASE SEAL IN THE OUTER GREASE SEAL LOCATION, YOU CAN CAUSE SEAL DAMAGE.

3) Install the grease seal [7] on the inner side of the wheel and the grease seal [10] on the outer side of the wheel.
   a) Make sure that the tab of grease seal fits indentation of cutout in wheel housing.
4) Install the retaining ring [11] on the inner side of the wheel and the retaining ring [12] on the outer side of the wheel.

H. Nose Landing Gear Wheel and Tire Assembly Installation

SUBTASK 32-45-21-420-001

(1) Do these steps to install the wheel and tire assembly [1]:
   (a) Inspect the axles for nicks, gouges, and damaged chrome plate.
   (b) If the axle spacer is removed, do a general visual inspection of the axles for corrosion (TASK 32-21-71-200-803).

> **CAUTION** MAKE SURE THAT THE SPACER IS CORRECTLY INSTALLED ON THE AXLE. THE SPACER CAN MOVE WHEN THE WHEEL AND TIRE ASSEMBLY IS REMOVED. IF IT IS NOT IN ITS CORRECT POSITION, THE WHEEL AND TIRE ASSEMBLY WILL NOT INSTALL CORRECTLY. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

   (c) Make sure that the axle spacer [5] is installed on the axle.

   NOTE: The axle spacer is inboard of the wheel on the axle. The inner bearing will touch the spacer when the wheel is installed.

   1) For airplanes that use cotter pins, make sure that the three new cotter pins [6] are installed to hold the spacer on the axle.

      NOTE: If you did not remove the axle spacer and it is installed correctly, it is not necessary to replace the three cotter pins [6].

      a) Examine the cotter pins [6] installation to make sure that they do not touch the torsion link lug during wheel installation.

         NOTE: An axle spacer that uses cotter pins has 3 holes.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) For airplanes that use lockwire, make sure that MS20995C41 lockwire, G00440, is installed.

NOTE: If you did not remove the axle spacer and it is installed correctly, it is not necessary to replace the lockwire.

a) Make sure that to bend the lockwire ends pigtails away from the inboard edge of the spacer (Figure 401).

b) Examine the completed installation to be sure that the lockwire ends do not touch the axle, or the torsion link lugs.

c) If necessary, adjust the lockwire to make sure that it does not touch the landing gear parts during landing gear operations.

NOTE: An axle spacer that uses lockwire has six holes.

WARNING DO NOT APPLY GREASE TO THE AREA BETWEEN THE AXLE BEARINGS. HIGH TEMPERATURES IN THIS AREA DURING A LANDING CAN CAUSE ALL GREASE IN THIS AREA TO BURN. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(d) Apply a thin layer of Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, to the face and outer diameter of the spacer [5].

(e) Apply a thin layer of Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, to the inner diameter surface of the two bearings where they will touch the axle.

(f) Apply a thin layer of Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, to the faces of the washer [2] and the axle nut [3], and to the axle threads.

(g) Apply a thin layer of Aeroshell 22 grease, D00378, or Mobil 28 grease, D00233, or Mobil Aviation Grease SHC 100 grease, D50005, on the axle where the axle will touch the wheel bearings.

(h) Install the thread protector, thread protector, SPL-1877, or thread protector, SPL-14582 (if the axle undersized threads).

(i) Use the wheel/brake changer dolly, COM-1818, to install the wheel and tire assembly [1].

(j) Install the wheel and tire assembly [1].

(k) Remove the thread protector assembly, of the thread protector, SPL-1877, from the axle threads.

(l) Align the key of the washer with the keyway of the axle and install the washer [2].

(m) Install the axle nut [3].

(n) Do these steps to torque the axle nut [3] with the NLG socket, C32012-3, SPL-1817, from kit socket, SPL-1865:

1) While you turn the wheel, torque the axle nut [3] to 80 ft-lb (108 N·m) - 100 ft-lb (136 N·m).

a) Stop the wheel.

b) While you turn the wheel, loosen the axle nut [3] to almost zero torque.

c) While you turn the wheel, torque the axle nut [3] to 30 ft-lb (41 N·m).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

d) Continue to tighten the axle nut [3] until two bolt holes in the nut align with two threaded holes in the washer [2].

NOTE: Do not torque the nut over 60 ft-lb (81 N·m).

(o) Install the two lock screws [4] to lock the axle nut [3] to the washer [2].

1) Torque the two lock screws [4] to 31.0 in-lb (3.5 N·m) - 38.0 in-lb (4.3 N·m).

(p) Install MS20995C32 lockwire, G01048, or MS20995NC32 lockwire, G50347, or MS20995N32 lockwire, G50177, on the lock screws [4].

(q) Make sure that the tire pressure is a minimum of half the correct pressure (TASK 12-15-51-780-801).

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-45-21-580-003

(1) Lower the axle and remove the jacks (TASK 07-11-03-580-802).

SUBTASK 32-45-21-000-001

(2) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, TASK 12-15-51-780-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE WHEEL SPIN BRAKE LINING - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks for the nose wheel spin brake lining.

(1) A removal of the nose wheel spin brake lining

(2) An installation of the nose wheel spin brake lining

(3) An inspection of the nose wheel spin brakes lining.

B. There are two nose wheel spin brake linings, one for each nose landing gear tire.

TASK 32-45-31-000-801

2. Nose Wheel Spin Brake Lining - Removal

(Figure 201)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right

C. Procedure

SUBTASK 32-45-31-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-45-31-860-001

(2) Set the parking brake.

SUBTASK 32-45-31-020-001

(3) Remove the screws [6], washers [1], and the nuts [2] which hold the spin brake lining [5] to the spin brake spring [3].

SUBTASK 32-45-31-020-002

(4) Remove the spin brake lining [5] and the spacers [4].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F95298 S0006575686_V2

Nose Landing Gear Spin Brake Lining Installation
Figure 201/32-45-31-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR SPIN BRAKE LINING
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

B

A-A

1 REPLACE BRAKE PAD IF THICKNESS IS EQUAL TO OR LESS THAN 0.060 INCH (1.524 mm).

2 TWO SPACERS IS THE STANDARD CONFIGURATION. HOWEVER, SOME AIRPLANES HAVE EITHER ONE OR THREE SPACERS THAT SEPARATE THE PAD AND THE SPRING.

3 FOR ONE OR TWO SPACERS, 1-INCH BOLTS ARE USED. IF THREE SPACERS ARE REQUIRED, 1.25-INCH BOLTS MUST BE USED.

F95291 S0006575687_V5

Nose Landing Gear Spin Brake Lining Installation
Figure 201/32-45-31-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-45-31-400-801

3. Nose Wheel Spin Brake Lining - Installation

(Figure 201)

A. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Spin Brake Lining	32-22-11-02-060	LOM ALL

C. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right

D. Procedure

SUBTASK 32-45-31-420-001

(1) Apply sealant, A00247 to the six locations on the spin brake spring [3] where you will install the spacers [4].

SUBTASK 32-45-31-420-002

(2) Hold the spin brake lining [5] in its position on the spin brake spring [3].

SUBTASK 32-45-31-420-003

(3) Do these steps for each screw [6]:

(a) Install two spacers [4] between the block and the spin brake spring [3] where you will install the screw [6].

(b) Install the screw [6] and washer [1] through the Spin Brake Lining [5], spacers [4], and the spin brake spring [3].

(c) Install the washer [1] and the nut [2] on the screw [6].

——— END OF TASK ———

TASK 32-45-31-700-801

4. Nose Wheel Spin Brake Lining Inspection

(Figure 201)

A. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right

B. Procedure

SUBTASK 32-45-31-220-001

(1) Measure the distance from the head of each bolt [6] to the wear surface of the spin brake lining [5].

SUBTASK 32-45-31-350-001

(2) If this distance you measured is less than 0.060 inches (1.524 mm) you must replace that spin brake lining [5]:

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These are the tasks:

- Nose Wheel Spin Brake Lining - Removal, TASK 32-45-31-000-801,
- Nose Wheel Spin Brake Lining - Installation, TASK 32-45-31-400-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE TEMPERATURE MONITORING SYSTEM (BTMS) - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) A BITE test of the brake temperature monitoring system (BTMS).

(2) A test to make sure that there is no cross wiring at the connectors for each brake temperature sensor.

B. The BITE test is a self test of the brake temperature monitoring system. The BITE test has a monitor test and a sensor test.

(1) The monitor test is a test of operation of the monitor unit and the electrical circuits that show the brake temperature indications.

(2) The sensor test is a test of the electrical circuit between the monitor unit and the sensors, and the electrical circuits of the sensors.

TASK 32-46-00-740-801

2. Brake Temperature Monitoring System (BTMS) - BITE Test

(Figure 501)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Prepare to do the test

SUBTASK 32-46-00-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-46-00-860-001

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-46-00-860-002

(3) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

SUBTASK 32-46-00-860-003

(4) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

E. Procedure to do a BITE test of the Brake Temperature Monitoring System (BTMS)

SUBTASK 32-46-00-740-001

(1) Do the Monitor Test:

(a) Turn and hold the test switch, on the monitor unit, in the MONITOR TEST position. Make sure that the following conditions occur:

1) The BRAKE TEMP light on P3 panel comes on.

2) The Common Display System (CDS) displays 5.0 or above at each brake.

3) All five lights on front panel of BTMU come on.

4) The color display of all symbols and numerals on CDS are Amber.

NOTE: All of the above indications must show, or the system has a malfunction.

(b) Release the test switch. Make sure that the following conditions occur.

1) The BRAKE TEMP light on P3 panel goes out.

2) The Common Display System (CDS) displays 0.0 or 0.1 in each brake.

3) All five lights on the front panel of the BTMU go out.

4) The color display of all symbols and numerals are White.

SUBTASK 32-46-00-740-002

(2) Do the Sensor Test:

(a) Turn and hold the test switch, on the monitor unit, in the SENSOR TEST position.

NOTE: You can ignore the CDS display during this test.

1) Make sure that all five indicator lights on the monitor unit come on.

NOTE: The system has a malfunction when the lights do not come on.

(b) Release the test switch.

1) Make sure that all five indicator lights on the monitor unit go out.

SUBTASK 32-46-00-860-004

(3) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-46-00-840-001

(4) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

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Brake Temperature Monitoring System Test
Figure 501/32-46-00-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Temperature Monitoring System Test
Figure 501/32-46-00-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-46-00-710-801

3. Brake Temperature Sensors - Operational Test of Each Sensor

A. General

(1) This task is necessary only if the landing gear or gear truck has been replaced or the brakes have been installed.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
212	Flight Compartment - Right

C. Operational Test of the Brake Temperature Sensors

SUBTASK 32-46-00-710-001

(1) Do the BITE Test of the Brake Temperature Monitoring System, do this task: Brake Temperature Monitoring System (BTMS) - BITE Test, TASK 32-46-00-740-801.

SUBTASK 32-46-00-710-002

(2) Do the Wiring Test:

(a) Turn and hold the test switch, on the monitor unit, in the SENSOR TEST position.

(b) Disconnect brake 1 connector, D3320 (L brake on the L gear).

1) Make sure that the light 1 on the Brake Temperature Monitor Unit (BTMU) is OFF and lights 2, 3, and 4 are ON.

2) Make sure that the Monitor light on the BTMU is OFF.

3) Make sure that the brake temperature on the Common Display System (CDS) displays 0.0 or 0.1 for brake 1, and 5.0 or higher for brakes 2, 3, and 4.

(c) Reconnect brake 1 connector, D3320.

(d) Repeat steps (b) through (c) for brake 2 (R brake on L gear), brake 3 (L brake on R gear), and brake 4 (R brake on R gear).

1) Each time make sure that the brake temperature display for the corresponding brake is 0.0 or 0.1 on the CDS, and 5 or higher for the other three brakes.

(e) Release the test switch.

SUBTASK 32-46-00-710-003

(3) After you have done the test for all the sensors and have connected the electrical connectors, do the Monitor Test as follows:

(a) Turn and hold the test switch, on the monitor unit, in the MONITOR TEST position.

1) Make sure that these conditions occur:

a) The BRAKE TEMP light, on the P3 panel, comes on.

b) The CDS displays 5.0 or above at each brake.

c) All five lights on front panel of the BTMU come on.

d) The color display of all symbols and numerals on the CDS are Amber.

NOTE: All of the above indications must show, or the system has a malfunction.

(b) Release the test switch.

1) Make sure that these conditions occur:

a) The BRAKE TEMP light, on the P3 panel, goes out.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

b) The CDS displays 0.0 or 0.1 in each brake.

c) All five lights on front panel of the BTMU go out.

d) The color display of all symbols and numerals are White.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE TEMPERATURE SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of a brake temperature sensor

(2) An installation of a brake temperature sensor.

TASK 32-46-21-000-801

2. Brake Temperature Sensor Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
212	Flight Compartment - Right

C. Prepare for the Removal

SUBTASK 32-46-21-860-001

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

SUBTASK 32-46-21-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

D. Brake Temperature Sensor Removal

SUBTASK 32-46-21-020-001

(1) Disconnect the electrical connector [2] from the brake temperature sensor [1].

SUBTASK 32-46-21-020-004

(2) Remove lockwire from the bolts [3].

SUBTASK 32-46-21-020-002

(3) Remove the bolts [3] and washers [4] that hold the brake temperature sensor [1] to the brake.

SUBTASK 32-46-21-020-003

(4) Remove the brake temperature sensor [1] from the airplane.

(a) If the brake temperature sensor [1] cannot be removed, do these tasks:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

- Main Landing Gear Brake Removal, TASK 32-41-41-000-801
- Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: The conduit bracket at the bottom of the shock strut can interfere with the removal or installation of the brake temperature sensor.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Temperature Sensor Installation
Figure 401/32-46-21-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-46-21-400-801

3. Brake Temperature Sensor Installation

(Figure 401)

A. References

Reference	Title
32-41-41-000-801	Main Landing Gear Brake Removal (P/B 401)
32-41-41-400-801	Main Landing Gear Brake Installation (P/B 401)
32-46-00-740-801	Brake Temperature Monitoring System (BTMS) - BITE Test (P/B 501)

B. Consumable Materials

Reference	Description	Specification
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Brake temperature sensor	32-46-00-02-010	LOM 432, 437, 438, 464
		32-46-00-02A-010	LOM 445

D. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
212	Flight Compartment - Right

E. Brake Temperature Sensor Installation

SUBTASK 32-46-21-010-001

(1) If it is necessary, remove and discard the screws and washers from the holes where the brake temperature sensor [1] will be installed.

NOTE: New brake assembly may be equipped with screws and washers that protect the holes where the brake temperature sensor is installed from the water, dirt, and moisture ingestion.

SUBTASK 32-46-21-420-001

(2) Install the brake temperature sensor [1] into its position in the brake.

(a) If the brake temperature sensor [1] cannot be installed, do these tasks:

- Main Landing Gear Brake Removal, TASK 32-41-41-000-801
- Main Landing Gear Brake Installation, TASK 32-41-41-400-801.

NOTE: The conduit bracket at the bottom of the shock strut can interfere with the removal or installation of the brake temperature sensor.

SUBTASK 32-46-21-420-002

(3) Install the bolts [3] and washers [4] that hold the brake temperature sensor [1] to the brake.

(a) Tighten the bolts [3] to 65 in-lb (7 N·m) - 100 in-lb (11 N·m).

SUBTASK 32-46-21-420-003

(4) Install the MS20995C32 lockwire, G01048, on the bolts [3] with double twist method.

SUBTASK 32-46-21-420-004

(5) Connect the correct electrical connector [2] to the brake temperature sensor [1] (Table 401).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 401/32-46-21-993-801

TEMPERATURE SENSOR	ELECTRICAL CONNECTOR
T455 L INBD	D3322
T454 L OUTBD	D3320
T456 R INBD	D3324
T457 R OUTBD	D3326

SUBTASK 32-46-21-860-003

(6) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

F. Brake Temperature Sensor Installation Test

SUBTASK 32-46-21-860-002

(1) Do this task: Brake Temperature Monitoring System (BTMS) - BITE Test, TASK 32-46-00-740-801.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE TEMPERATURE MONITOR UNIT (BTMU) - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the brake temperature monitor unit

(2) An installation of the brake temperature monitor unit.

(3) In this procedure the brake temperature monitor unit (BTMU) is called the unit [1]

B. The unit [1] is mounted in the electronic equipment rack, E1-3, which is located in the left side of the main equipment center.

TASK 32-46-31-000-801

2. Brake Temperature Monitor Unit Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Prepare for the Removal

SUBTASK 32-46-31-860-001

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

E. Brake Temperature Monitor Unit (BTMU) Removal

SUBTASK 32-46-31-840-001

CAUTION

DO NOT TOUCH THE UNIT BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ANTISKID CONTROL UNIT.

(1) Do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 32-46-31-010-001

(2) Get access to the main equipment center through this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-46-31-020-002

(3) Remove the unit [1] from the electrical equipment rack E1-3, do this task: E/E Box Removal, TASK 20-10-07-000-801.

SUBTASK 32-46-31-840-002

(4) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Temperature Monitoring System
Figure 401/32-46-31-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-46-31-400-801

3. Brake Temperature Monitor Unit Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-000-804	Conductive Dust Cap and Connector Cover Removal (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
32-46-00-740-801	Brake Temperature Monitoring System (BTMS) - BITE Test (P/B 501)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Brake Temperature Monitor Unit Installation (BTMU)

SUBTASK 32-46-31-840-003

CAUTION DO NOT TOUCH THE ANTISKID CONTROL UNIT BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ANTISKID CONTROL UNIT.

(1) Do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 32-46-31-840-004

(2) Do this task: Conductive Dust Cap and Connector Cover Removal, TASK 20-40-12-000-804.

SUBTASK 32-46-31-420-001

(3) Install the unit [1] in the E1-3 electrical equipment rack, do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 32-46-31-860-002

(4) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

SUBTASK 32-46-31-710-001

(5) Do this task: Brake Temperature Monitoring System (BTMS) - BITE Test, TASK 32-46-00-740-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE WHEEL STEERING SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure contains these tasks:

(1) The general check of the adjustment of the steering system on the nose wheel

(2) The check of the adjustment of the interconnect mechanism for the rudder pedals

(3) The adjustment of the interconnect mechanism for the rudder pedals

(4) The check of the adjustment of the steering system on the nose wheel

(5) The adjustment of the steering system on the nose wheel

(6) The adjustment of the steering system on the nose wheel (Adjusting Steering Metering Valve Input Rod Method)

(7) The test of the steering system on the nose wheel.

B. Nose wheel steering system adjustment has two parts that must be done in sequence. The first part is an adjustment of the interconnect mechanism for the rudder pedals that includes the nose gear piston position (NGPP) cable loop. The second part is an adjustment of the cable loop for the nose wheel steering (NWS) and rudder input. In general, it is necessary to adjust the cables when the rig loads disagree with the loads given in Table I by more than +15/-5 pounds.

C. Hydraulic pressure to the nose wheel steering system is necessary for this adjustment procedure.

D. The rig load for the cables change with the ambient temperature per Table I.

E. Use the shock strut centering cam to get the centered position for the nose gear. Manual assistance can be necessary to make sure the cam is correctly centered.

F. When the cables are adjusted to the correct rig loads all the rig pins can be inserted in their rig pin holes and removed freely, without binding.

TASK 32-51-00-820-803

2. General Check of the Adjustment of the Nose Wheel Steering System

(Figure 501)

A. General

(1) This task provides instructions to do a general check of the adjustment of the nose wheel steering system. If the cable tension is within limits, the rig pin fit is good, and the system test is satisfactory, then the nose wheel steering system is fully operable.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Reference	Description
COM-1553	Tensiometer - Cable, Low Tension (200 lbs and below) Part #: 102-03108 Supplier: 21844 Part #: 102-03120 Supplier: 21844 Part #: ACM-200 Supplier: 13331 Part #: ACX-250-1 Supplier: 13331 Part #: T60-1001-C8-1A Supplier: 0N8U4
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
STD-5505	Spring Scale

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

F. Prepare for the General Check of the Adjustment of the Nose Wheel Steering System

SUBTASK 32-51-00-480-014

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-00-860-051

WARNING REMOVE HYDRAULIC POWER FOR THE NOSE WHEEL STEERING BEFORE YOU DO THE CHECK. HYDRAULIC POWER CAN CAUSE THE NOSE WHEELS TO MOVE. INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-010-012

(3) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-010-025

(4) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM ALL

G. General Check of the Adjustment of the Nose Wheel Steering System

SUBTASK 32-51-00-820-014

(1) Make sure that the tension in the cables NGPP-A and NGPP-B is such that the load necessary to deflect the cable 0.45 in. (11.4 mm) to 0.55 in. (14.0 mm) downward at the turnbuckle is 16 lbf (71.2 N) to 22 lbf (97.9 N) (as measured with a spring scale, STD-5505).

SUBTASK 32-51-00-820-015

(2) Use a low tension cable tensiometer, COM-1553, to make sure that the tension in the cables NWS-A and NWS-B is in tolerance (Table I, Figure 501).

SUBTASK 32-51-00-480-015

(3) Install these rig pins, rigging pin kit, SPL-1585, as follows:

(a) Rig pin NS2 in the Captain's control wheel drum.

LOM 443, 444, 464-999

(b) Rig pin NS10 in the First Officer's control wheel drum.

LOM ALL

(c) Rig pin NS1 in the interconnect quadrant.

(d) Rig pin NS5 in the interconnect eccentric drum. Do the following steps:

1) Do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

2) Make sure that the interconnect eccentric drum rig pin hole and bracket rig pin slot line up.

3) Install rig pin NS5.

(e) Rig pin R3 in the rudder forward quadrant.

(f) Rig pin NS4 in the summing mechanism bracket at the steering metering valve.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-820-016

(4) Make sure that all the rig pins have a free fit.

NOTE: The rig pins have a free fit if you can install or remove them with two fingers. Some resistance is permitted.

SUBTASK 32-51-00-080-010

(5) Remove all the rig pins.

SUBTASK 32-51-00-080-015

(6) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 32-51-00-730-037

(7) With the control wheel in the center position, make sure that the steering angle is 0 +/-1.5 degrees on the decal that is on the nose gear shock strut.

NOTE: If the decal is not on the nose gear shock strut, then use the illustration in Figure 501 to make a decal with tape.

SUBTASK 32-51-00-210-003

(8) Examine all of the adjustable rod ends to make sure there is correct thread engagement.

NOTE: The end of the rod end must cover at least 50 percent of the inspection hole.

SUBTASK 32-51-00-210-004

(9) After the cables are adjusted, the cable cannot touch the pulley or quadrant flanges for the full travel of the cables.

NOTE: The cables must stay in the plane of the pulley or quadrant within +/-2 degrees.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-410-007

(10) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-410-020

(11) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM ALL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

G14245 S0006575722_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 1 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G13874 S0006575724_V5

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 2 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL

C

G14006 S0006575726_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 3 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S RUDDER FORWARD QUADRANT

D

G16094 S0006575728_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 4 of 19)

EFFECTIVITY
LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER PEDAL STEERING INTERCONNECT MECHANISM

E

G14260 S0006575730_V3

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 5 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER PEDAL STEERING INTERCONNECT MECHANISM AND ROTARY ACTUATOR

F

G14328 S0006575732_V3

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 6 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G14349 S0006575734_V4

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 7 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

I

STEERING ANGLE TAPE

J

G14355 S0006575736_V4

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 8 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TEMPERATURE ˚F	RIG LOAD (LBS) 1
130	56
110	51
90	46
70	40
50	35
30	29
10	24
-10	18
-22	15 2
-30	13 2
-40	10 2

TABLE I

1 CABLE LOADS MUST BE WITHIN +10/-00 POUNDS OF TABLE I VALUES WHEN YOU ADJUST THE SYSTEM. AFTER INITIAL ADJUSTMENT ANY DEVIATION FROM TABLE I VALUES +15/-5 POUNDS, AT -22˚F OR ABOVE, SHALL REQUIRE THAT THE SYSTEM ADJUSTED AGAIN.

2 AT TEMPERATURES BELOW -22˚F, THE MINIMUM CABLE LOAD SHALL BE 10 POUNDS.

G15616 S0006575738_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 9 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

K63277 S0006575723_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 10 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S CONTROL WHEEL
(FIRST OFFICER'S CONTROL WHEEL IS EQUIVALENT)

B

1 NWSA CABLE IS INSTALLED FORWARD FOR CAPTAIN'S CONTROL WHEEL.

2 NWSB CABLE IS INSTALLED FORWARD FOR FIRST OFFICER'S CONTROL WHEEL.

3 NS2 AND NS10 RIG PINS ARE THE SAME PART NUMBER IN THE KIT.

K63283 S0006575725_V5

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 11 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL

C

K63290 S0006575727_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 12 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S RUDDER FORWARD QUADRANT

D

K63292 S0006575729_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 13 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER PEDAL STEERING INTERCONNECT MECHANISM

E

K63293 S0006575731_V3

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 14 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER PEDAL STEERING INTERCONNECT MECHANISM AND ROTARY ACTUATOR

F

K63295 S0006575733_V3

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 15 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K63296 S0006575735_V3

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 16 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

I

STEERING ANGLE TAPE

J

K63297 S0006575737_V4

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 17 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL

K

K64195 S0006575739_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 18 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(FOR NWSA AND NWSB CABLES ON AIRPLANES EQUIPPED WITH RIGHT SIDE NWS)	
TEMPERATURE ˚F	RIG LOAD (LBS) 1
130	47
110	42
90	37
70	31
50	25
30	20
10	14
-10	12.5
-30	11.5
-40	11

TABLE I

1 CABLE LOADS MUST BE WITHIN +10/-00 POUNDS OF TABLE I VALUES WHEN THE SYSTEM IS BEING RIGGED AT 10˚F OR HIGHER. CABLE LOADS MUST BE WITHIN +1.5 OR -0 LBS. OF TABLE I VALUES WHEN THE SYSTEM IS RIGGED BELOW 10˚. AFTER INITIAL RIGGING, ANY DEVIATION FROM TABLE I VALVES +15,-5 LBS. AT +10˚F OR ABOVE, OR ±2.5 POUNDS FOR LESS THAN 10˚F, SHALL REQUIRE THAT THE SYSTEM BE RE-RIGGED.

K63275 S0006575740_V2

Nose Wheel Steering System Adjustment
Figure 501/32-51-00-990-804 (Sheet 19 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-00-820-804

3. Rudder Pedal Interconnect Mechanism Adjustment Check

(Figure 501)

A. General

(1) This procedure provides instructions to check the adjustment of the interconnect mechanism for the rudder pedals.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
STD-5505	Spring Scale

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Prepare to Check the Adjustment of the Interconnect Mechanism for the Rudder Pedals

SUBTASK 32-51-00-480-016

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-00-860-052

> **WARNING** REMOVE HYDRAULIC POWER FOR THE NOSE WHEEL STEERING BEFORE YOU DO THE CHECK. HYDRAULIC POWER CAN CAUSE THE NOSE WHEELS TO MOVE. INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-010-013

(3) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-010-017

(4) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM ALL

G. Check the Adjustment of the Interconnect Mechanism for the Rudder Pedals

SUBTASK 32-51-00-820-017

(1) Make sure the conditions of this check are satisfactory. If they are not, do this task (TASK 32-51-00-820-801).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-820-018

(2) Make sure you can install the rig pin NS1, rigging pin kit, SPL-1585, in the interconnect quadrant.

NOTE: The rig pins have a free fit if you can install or remove them with two fingers. Some resistance is permitted.

SUBTASK 32-51-00-820-027

(3) Make sure you can install the rig pin NS5, rigging pin kit, SPL-1585, in the interconnect eccentric drum. Do the following steps:

NOTE: The rig pins have a free fit if you can install or remove them with two fingers. Some resistance is permitted.

(a) Do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

(b) Make sure the interconnect eccentric drum rig pin hole and bracket rig pin slot line up.

(c) Install rig pin NS5

SUBTASK 32-51-00-080-011

(4) Remove the rig pins NS1 and NS5.

SUBTASK 32-51-00-840-001

(5) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 32-51-00-820-019

(6) Make sure the tension in the cables NGPP-A and NGPP-B is such that the load necessary to move the cable 0.45 in. (11.4 mm) to 0.55 in. (14.0 mm) at the turnbuckle is 16 lbf (71.2 N) to 22 lbf (97.9 N) (as measured with a spring scale, STD-5505).

NOTE: If correct tension cannot be achieved, make sure that the cable terminal ends are started equally into the threads of the turnbuckle barrel.

SUBTASK 32-51-00-210-005

(7) Examine all of the adjustable rod ends to make sure there is correct thread engagement.

NOTE: The end of the rod end must cover at least 50 percent of the inspection hole.

SUBTASK 32-51-00-210-006

(8) After the cables are adjusted, the cable cannot touch the pulley or quadrant flanges for the full travel of the cables.

NOTE: The cables must stay in the plane of the pulley or quadrant within +/-2 degrees.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-410-008

(9) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 443, 444, 464-999

SUBTASK 32-51-00-410-012

(10) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM ALL

——— END OF TASK ———

TASK 32-51-00-820-801

4. Rudder Pedal Interconnect Mechanism Adjustment

(Figure 501)

A. General

(1) This procedure provides instructions to do the adjustment of the interconnect mechanism for the rudder pedals.

B. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
STD-5505	Spring Scale

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Zone	Area
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

F. Prepare to Adjust the Interconnect Mechanism for the Rudder Pedals

SUBTASK 32-51-00-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-00-580-001

(2) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-00-860-001

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-00-860-002

(4) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

SUBTASK 32-51-00-860-003

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Move the towing lever to the tow position and install the NLG towing lever pin, SPL-1499.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-820-001

(6) Make sure the nose wheels are in the center position.

NOTE: The inner cylinder centering cam will put the nose wheels in the center position when the airplane is lifted on jacks. Manual assistance may be necessary to make sure the nose gear and cam is in the center position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-010-014

(7) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-010-018

(8) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM ALL

G. Adjust the Interconnect Mechanism for the Rudder Pedals

SUBTASK 32-51-00-020-001

(1) Remove the turnbuckle locking clips from the turnbuckles on the NGPP-A and NGPP-B cables.

SUBTASK 32-51-00-020-002

(2) Remove the nut [7], washer [6], and bolt [5] to disconnect the idler rod on the rudder pedal interconnect mechanism from the structure.

SUBTASK 32-51-00-220-001

(3) Make sure the rotary actuator is turned in the counter-clockwise direction with the index marks aligned to show that it is in the air mode.

SUBTASK 32-51-00-480-021

(4) Install rig pins NS1 and NS5. Do the following steps:

(a) Install the rig pin NS1, rigging pin kit, SPL-1585.

(b) Do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

1) Make sure the interconnect eccentric drum rig pin hole and bracket rig pin slot line up.

(c) Install rig pin NS5

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-820-003

(5) Adjust the tension in cables NGPP-A and NGPP-B until the load necessary to move the cable 0.45 in. (11.4 mm) to 0.55 in. (14.0 mm) downward at the turnbuckle is 16 lbf (71.2 N) to 22 lbf (97.9 N) (as measured with a spring scale, STD-5505).

NOTE: It is not necessary to allow for the temperature because the NGPP cables are very short.

SUBTASK 32-51-00-080-001

(6) Remove the rig pin NS5.

SUBTASK 32-51-00-710-001

(7) Operate the rotary actuator five times from the air mode, (do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801), back to the ground mode, (do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802), and back again.

(a) Make sure the rotary actuator changes from the air mode to the ground mode, and back again each time.

SUBTASK 32-51-00-210-001

(8) Make sure that the rig pin NS5 fits freely. Do the following steps:

(a) Do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

(b) Make sure the interconnect eccentric drum rig pin hole and bracket rig pin slot line up.

(c) Make sure rig pin NS5 can be installed and removed freely.

SUBTASK 32-51-00-820-024

(9) Make sure the tension in the cables NGPP-A and NGPP-B is such that the load necessary to move the cable 0.45 in. (11.4 mm) to 0.55 in. (14.0 mm) at the turnbuckle is 16 lbf (71.2 N) to 22 lbf (97.9 N) (as measured with a spring scale, STD-5505).

(a) If it is necessary, adjust the cable turnbuckles until the rig pin NS5 is free and the tension in the cables is correct.

SUBTASK 32-51-00-820-002

(10) Adjust the length of the idler rod, if it is necessary, so that the bolt [5] fits freely when it is installed through the rod end and the structure.

(a) Install the bolt [5], washer [6], and nut [7] to attach the idler rod to the structure.

SUBTASK 32-51-00-080-013

(11) Make sure the rig pin NS1 fits freely.

SUBTASK 32-51-00-080-014

(12) Remove rig pin NS1.

SUBTASK 32-51-00-420-008

(13) Install the turnbuckle locking clips on the turnbuckles for the NGPP-A and NGPP-B cables.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-410-009

(14) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 443, 444, 464-999

SUBTASK 32-51-00-410-013

(15) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM ALL

SUBTASK 32-51-00-860-044

(16) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

END OF TASK

TASK 32-51-00-820-805

5. Nose Wheel Steering System Adjustment Check

(Figure 501)

A. General

(1) This task provides instructions to check the adjustment of the steering system of the nose wheel.

B. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left

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(Continued)

Zone	Area
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

F. Prepare to Check the Adjustment of the Steering System of the Nose Wheel

SUBTASK 32-51-00-480-017

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-010-015

(2) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-010-019

(3) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM ALL

SUBTASK 32-51-00-580-008

(4) Lift the airplane on jacks, until the nose gear shock strut is fully extended and the wheels do not touch the ground, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-860-053

(5) Make sure that electrical power is on (TASK 24-22-00-860-811).

SUBTASK 32-51-00-860-054

(6) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-00-860-055

(7) Make sure that the control lever for the landing gear is in the DN position.

SUBTASK 32-51-00-860-056

(8) Make sure that the NOSE WHEEL STEERING ALTERNATE switch is in the NORM position.

SUBTASK 32-51-00-860-057

(9) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	15	C01355	LANDING GEAR AIR/GND SYS 2
D	17	C01027	LANDING GEAR NOSE GEAR STEER

G. Check the Adjustment of the Steering System of the Nose Wheel

SUBTASK 32-51-00-820-020

(1) Make sure that the conditions of this check are satisfactory, if they are not, do this task (TASK 32-51-00-820-802).

SUBTASK 32-51-00-730-038

(2) Make sure that the steering angle is 0 +/-1.5 degrees on the decal that is on the nose gear shock.

NOTE: The inner cylinder centering cam will put the nose wheels in the center position when the airplane is lifted on jacks. Manual assistance may be necessary to make sure that the nose gear and cam is in the center position.

NOTE: If the decal is not on the nose gear shock strut, then use the illustration in Figure 501 to make a decal with tape.

SUBTASK 32-51-00-860-058

WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF CONTROL SURFACES, CABLES, AND LANDING GEAR AREAS. PRESSURIZATION OF A HYDRAULIC SYSTEM CAN MOVE CONTROL SURFACES, CABLES, LANDING GEAR, AND LANDING GEAR DOORS. MOVEMENT OF CONTROL SURFACES, CABLES, LANDING GEAR, AND LANDING GEAR DOORS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-51-00-730-039

(4) Make sure that the nose gear stays centered.

NOTE: If the nose gear moves when the hydraulic system is pressurized, the nose gear steering is not adjusted correctly. There is a disagreement between the steering system and the mechanical centerline position of the nose gear centering cams.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-820-021

(5) Make sure that the tension in the cables NWS-A and NWS-B is in tolerance (Table I, Figure 501).

SUBTASK 32-51-00-010-004

(6) Remove the screws [8], washers [9], and summing mechanism cover [10].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-010-026

(7) Do these steps that follow to get access to the Captain's rig pin hole for the control wheels:

(a) Remove the screw [15] from the access cover [14].

(b) Turn the access cover [14] counterclockwise to get access to the rig pin hole.

LOM 443, 444, 464-999

SUBTASK 32-51-00-010-027

(8) Do these steps that follow to get access to the Captain's and First Officer's rig pin hole for the control wheels:

(a) Remove the screw [15] from the access cover [14].

(b) Turn the access cover [14] counterclockwise to get access to the rig pin hole.

LOM ALL

SUBTASK 32-51-00-480-018

(9) Make sure that you can install the rig pins, rigging pin kit, SPL-1585, that follow:

NOTE: The steering system has a 1 - 2 degree dead band in the center position.

(a) Rig pin NS2 in the Captain's control wheel drum.

LOM 443, 444, 464-999

(b) Rig pin NS10 in the First Officer's control wheel drum.

LOM ALL

(c) Rig pin NS1 in the interconnect quadrant.

(d) Rig pin R3 in the rudder forward quadrant.

(e) Rig pin NS4 in the summing mechanism bracket at the steering metering valve.

SUBTASK 32-51-00-820-022

(10) Make sure that all the rig pins have a free fit.

NOTE: The rig pins have a free fit if you can install or remove them with two fingers. Some resistance is permitted.

SUBTASK 32-51-00-080-012

(11) Remove all the rig pins.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-410-024

(12) Do these steps that follow to cover the Captain's rig pin hole for the control wheels:

(a) Turn the access cover [14] clockwise.

1) Make sure that the pointer on the Captain's control wheel is within the CENTER band on the access cover [14] marker.

(b) Install the screw [15] to attach the access cover [14].

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LOM 443, 444, 464-999

SUBTASK 32-51-00-410-025

(13) Do these steps that follow to cover the Captain's and First Officer's rig pin hole for the control wheels:

(a) Turn the access cover [14] clockwise.

1) Make sure that the pointer on the Captain's and First Officer's control wheels are within the CENTER band on the access cover [14] markers.

(b) Install the screw [15] to attach the access cover [14].

LOM ALL

H. Check the Travel Operation of the Nose Wheel to the Center with the Hydraulic Power On

SUBTASK 32-51-00-860-059

WARNING	MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF CONTROL SURFACES, CABLES, AND LANDING GEAR AREAS. PRESSURIZATION OF A HYDRAULIC SYSTEM CAN MOVE CONTROL SURFACES, CABLES, LANDING GEAR, AND LANDING GEAR DOORS. MOVEMENT OF CONTROL SURFACES, CABLES, LANDING GEAR, AND LANDING GEAR DOORS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-51-00-480-019

(2) Make sure that the greased plates are under the nose wheels.

NOTE: Plates made of steel are suggested. Plates made of a soft material such as aluminum can be destroyed by the test.

SUBTASK 32-51-00-580-009

(3) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-51-00-730-040

(4) Do the steps that follow to make sure that the Captain's control wheel operates correctly:

(a) Turn the Captain's control wheel to operate the nose wheel steering through at least 6 complete cycles, and make sure that it operates freely and smoothly.

NOTE: One cycle of the system is from center to full right, then to full left, then back to center.

(b) Make sure that there is no leakage of hydraulic fluid from the nose gear steering tubing and fittings from the landing gear selector valve to the valves on the steering actuators.

(c) Turn the nose wheels with the Captain's control wheel from the center position to the LEFT (CCW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(d) Release the Captain's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

(e) Turn the nose wheels with the Captain's control wheel from the center position to the RIGHT (CW) stop position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(f) Release the Captain's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

LOM 443, 444, 464-999

SUBTASK 32-51-00-730-045

(5) Do the steps that follow to make sure that the First Officer's control wheel operates correctly:

(a) Turn the First Officer's control wheel to operate the nose wheel steering through at least 6 complete cycles, and make sure that it operates freely and smoothly.

NOTE: One cycle of the system is from center to full right, then to full left, then back to center.

(b) Turn the nose wheels with the First Officer's control wheel from the center position to the LEFT (CCW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(c) Release the First Officer's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

(d) Turn the nose wheels with the First Officer's control wheel from the center position to the RIGHT (CW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(e) Release the First Officer's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

LOM ALL

SUBTASK 32-51-00-210-008

(6) Examine all of the adjustable rod ends to make sure that there is correct thread engagement.

NOTE: The end of the rod end must cover at least 50 percent of the inspection hole.

SUBTASK 32-51-00-210-009

(7) After the cables are adjusted, the cable cannot touch the pulley or quadrant flanges for the full travel of the cables.

NOTE: The cables must stay in the plane of the pulley or quadrant within +/-2 degrees.

SUBTASK 32-51-00-410-003

(8) Install the summing mechanism cover [10] with screws [8] and washers [9].

SUBTASK 32-51-00-860-060

(9) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-00-580-018

(10) Lift the airplane on jacks, until the nose gear shock strut is fully extended and the wheels do not touch the ground (TASK 07-11-01-580-815).

SUBTASK 32-51-00-020-016

(11) Remove the greased plates from under the nose wheels.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-580-019

(12) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-51-00-860-061

(13) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-410-010

(14) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-410-014

(15) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM ALL

——— END OF TASK ———

TASK 32-51-00-820-802

6. Nose Wheel Steering System Adjustment

(Figure 501, Figure 502)

A. General

(1) This task provides instructions to do the adjustment of the steering system of the nose wheel.

(a) There three methods to perform this task:

1) Method 1: Airplane on Ground (off Jacks).

a) Method 1 requires removal of the torsion link apex pin to disconnect the steering mechanism from the wheel assembly.

2) Method 2: Airplane on Jacks.

a) Method 2 requires the Nose Landing Gear (NLG) to be compressed while the airplane is jacked.

3) Method 3: Airplane on Grease Plate.

a) Method 3 does not need removal of the torsion pin. The grease plate will prevent tire scuffing when the NLG is turned left or right.

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LOM 443, 444, 464-999

(2) When you adjust turnbuckles for the steering cables, make sure that you adjust the Captain's and First Officer's cables to obtain the correct load.

LOM ALL

B. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
09-11-00-580-801	Maintenance Towing (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)
32-51-11-400-801	Steering Metering Valve Installation (Without Using Cable Clamp Assembly) (P/B 401)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1553	Tensiometer - Cable, Low Tension (200 lbs and below) Part #: 102-03108 Supplier: 21844 Part #: 102-03120 Supplier: 21844 Part #: ACM-200 Supplier: 13331 Part #: ACX-250-1 Supplier: 13331 Part #: T60-1001-C8-1A Supplier: 0N8U4
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

F. Prepare for the Nose Wheel Steering System Adjustment

SUBTASK 32-51-00-480-030

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-00-860-082

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-010-016

(3) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-010-020

(4) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM ALL

SUBTASK 32-51-00-860-088

(5) Make sure that electrical power is on (TASK 24-22-00-860-811).

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SUBTASK 32-51-00-860-105

(6) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

SUBTASK 32-51-00-420-020

(7) Make sure that the rotary actuator is in ground mode for all methods.

NOTE: When the rotary actuator is in ground mode, the rotary actuator will move the cable drum clockwise. The witness line on the cable drum shall move to a tolerance angle of 102 degrees - 112 degrees with respect to the witness lines on the housing. This is used to determine the position of the rotary actuator.

SUBTASK 32-51-00-580-020

(8) For Method 1, do these steps:

(a) Tow the airplane at least 12 ft (3.7 m) in a straight line before it is parked (TASK 09-11-00-580-801).

(b) Remove the clamps, brackets and conduit attached to the Nose Landing Gear/Taxi Light.

NOTE: Clamps on torsion links are removed to prevent damage to the conduit.

(c) Disconnect the torsion link apex pin (TASK 32-21-31-000-803).

SUBTASK 32-51-00-580-002

(9) For Method 2, do these steps:

(a) Lift the airplane on jacks until the nose gear shock strut is fully extended and wheels do not touch the ground, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

NOTE: The nose of the airplane is lifted on jacks to find the center position of the nose landing gear and steering collar. The internal centering cam of the shock strut is used to do this.

CAUTION MAKE SURE THAT THE SHOCK STRUT IS COMPRESSED. THE CENTERING CAMS WILL BE ENGAGED IF THE SHOCK STRUT IS NOT COMPRESSED THE MINIMUM AMOUNT. THIS CAN CAUSE DAMAGE TO THE AIRCRAFT.

(b) Make sure that the shock strut for the NLG is compressed a minimum of 3.5 in. (88.9 mm).

(c) Open this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

NOTE: Opening the circuit breaker will prevent steering disengaging during the test.

SUBTASK 32-51-00-580-021

(10) For Method 3, tow the airplane at least 12 ft (3.7 m) in a straight line before it is parked on the grease plate (TASK 09-11-00-580-801).

SUBTASK 32-51-00-860-083

(11) Make sure that the steering angle is 0 +/-1.5 degrees on the decal that is on the nose gear shock.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-860-046

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(12) Move the towing lever to the TOW position and install the NLG towing lever pin, SPL-1499.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-51-00-820-031

(13) Adjust the cable guard [16] until there is a clearance from the steering collar pulley of 0.0320 +0.0450 / -0.0150 in. (0.8128 +1.1430 / -0.3810 mm) (Figure 502).

(a) If it is necessary, loosen the screws [18] and nuts [17] to adjust the position of the cable guard [16].

(b) If you loosen the nuts [17] to adjust the cable guard [16], tighten them to 20 in-lb (2.3 N·m) - 25 in-lb (2.8 N·m).

LOM 462-999

SUBTASK 32-51-00-820-035

(14) Adjust the cable guard [16] until there is a clearance from the steering collar pulley of 0.0150 in. (0.3810 mm) - 0.0450 in. (1.1430 mm) (Figure 502).

(a) If it is necessary, loosen the screws [18] and nuts [17] to adjust the position of the cable guard [16].

(b) If you loosen the nuts [17] to adjust the cable guard [16], tighten them to 20 in-lb (2.3 N·m) - 25 in-lb (2.8 N·m).

LOM ALL

SUBTASK 32-51-00-020-003

(15) Remove the nut [4], washer [3], and bolt [2] to disconnect the rudder pedal input rod from the steering crank.

SUBTASK 32-51-00-730-046

(16) Make sure that the steering angle is 0 +/-1.5 degrees on the decal that is on the nose gear shock.

NOTE: The inner cylinder centering cam will put the nose wheels in the center position when the airplane is lifted on jacks. Manual assistance could be necessary to make sure that the nose gear and cam is in the center position.

(a) If the decal is not on the nose gear shock strut, make a decal with tape (View J, Figure 501).

SUBTASK 32-51-00-010-001

(17) Remove the screws [8], washers [9], and summing mechanism cover [10].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-010-003

(18) Do the steps that follow to get access to the Captain's rig pin hole for the control wheels:

(a) Remove the screw [15] from the access cover [14].

(b) Turn the access cover [14] counterclockwise to get access to the rig pin hole.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 443, 444, 464-999

SUBTASK 32-51-00-010-029

(19) Do the steps that follow to get access to the Captain's and First Officer's rig pin hole for the control wheels:

(a) Remove the screw [15] from the access cover [14].

(b) Turn the access cover [14] counterclockwise to get access to the rig pin hole.

LOM ALL

G. Nose Wheel Steering System Adjustment

SUBTASK 32-51-00-820-006

(1) Disconnect the steering valve input rod from the steering metering valve summing mechanism.

SUBTASK 32-51-00-480-026

(2) Install the rig pin NS4 in the summing mechanism bracket at the steering metering valve.

NOTE: This step checks rig pin NS4 against only the centering springs inside the steering valve. A step will follow that checks the rig pin against the steering cables. These steps must be performed in this order.

(a) If the removed bolt does not fit freely, do these steps to adjust the length of the steering valve input rod such that you can install the bolt freely:

1) Loosen the jamnuts to disengage the locking keys.

2) Adjust the length of the steering valve input rod.

3) Tighten the jamnuts and install safety wire.

4) Make sure that the safety wire tail is on the aft end of the steering valve input rod when installed.

SUBTASK 32-51-00-840-002

(3) Connect the steering valve input rod from the steering metering valve summing mechanism.

SUBTASK 32-51-00-480-004

(4) Install rig pin NS2, rigging pin kit, SPL-1585, in the Captain's control wheel drum.

SUBTASK 32-51-00-490-002

(5) Install the rig pin NS1 in the interconnect quadrant.

LOM 443, 444, 464-999

SUBTASK 32-51-00-480-020

(6) Install the rig pin NS10 in the First Officer's control wheel drum.

LOM ALL

SUBTASK 32-51-00-020-004

(7) Remove the locking clips from the turnbuckles on the NWS-A and NWS-B cables.

SUBTASK 32-51-00-820-007

(8) For new cables only, do these steps:

(a) Use the low tension cable tensiometer, COM-1553, to adjust the load on NWS-A and NWS-B cables to 85 ±5 lbf (378 ±22 N).

(b) Remove all rig pins.

(c) For Method 1, make sure that the upper torsion link and other components are supported in a way that it does not contact the tires or doors when the system is operated.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAUTION MAKE SURE THAT THE SHOCK STRUT IS COMPRESSED. THE CENTERING CAMS WILL BE ENGAGED IF THE SHOCK STRUT IS NOT COMPRESSED THE MINIMUM AMOUNT. THIS CAN CAUSE DAMAGE TO THE AIRCRAFT.

(d) For Method 2, make sure that the shock strut for the NLG is compressed a minimum of 3.5 in. (88.9 mm).

(e) For Method 3, make sure that the grease plates are under the tires.

NOTE: Plates made of steel are suggested. Plates made of a soft material such as aluminum can be destroyed by the test.

(f) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(g) Remove the NLG towing lever pin, SPL-1499, and move the towing lever to the PRESSURE ON position.

CAUTION HOLD THE UPPER TORSION LINK TO SET THE AIRPLANE NOSE TO THE GROUND MODE. IF YOU DO NOT OBEY, DAMAGE TO THE CONDUIT CAN OCCUR.

(h) For Method 1, hold the upper torsion link to set airplane nose to the ground mode.

(i) Use the steering tiller to operate the steering system of the nose wheel through 25 cycles (center-full left-full right-center).

WARNING ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(j) Move the towing lever to the TOW position and install the NLG towing lever pin, SPL-1499.

(k) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(l) Make sure that the gear is steered to the straight ahead position before rigging.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

(m) Install the rigging pins NS1, NS2, and NS4.

LOM 443, 444, 464-999

(n) Install the rigging pins NS1, NS2, NS10, and NS4.

LOM ALL

(o) Use the low tension cable tensiometer, COM-1553, to remove the load from the cables.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-820-009

(9) Adjust the tension of all the segments of cables NWS-A and NWS-B until the rig pins NS1, NS2, and NS4 fit freely (Table I, Figure 501).

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LOM 443, 444, 464-999

SUBTASK 32-51-00-820-034

(10) Adjust the tension of all the segments of cables NWS-A and NWS-B until the rig pins NS1, NS2, NS10, and NS4 fit freely (Table I, Figure 501).

NOTE: Adjust the Captain's and First Officer's turnbuckles to adjust the cable tension.

SUBTASK 32-51-00-820-025

(11) For used and new cables, do the steps that follow to check the cable temperature compensator:

(a) Make sure that the cable is not visible in the lower inspection hole.

(b) Make sure that the spring is not visible in the upper inspection hole.

(c) Make sure that the inspection holes are only partially blocked by internal parts.

NOTE: Below 10°F (-12°C), the upper inspection hole can be completely blocked or the spring can be visible.

LOM ALL

SUBTASK 32-51-00-420-018

(12) Make sure that the rotary actuator is in ground mode for all methods.

NOTE: When the rotary actuator is in ground mode, the rotary actuator will move the cable drum clockwise. The witness line on the cable drum shall move to a tolerance angle of 102 degrees - 112 degrees with respect to the witness lines on the housing. This is used to determine the position of the rotary actuator.

SUBTASK 32-51-00-420-005

(13) Install rig pin R3 in the rudder forward quadrant.

NOTE: This step is necessary to make sure that the rudder system rigging will not affect the steering system rigging.

NOTE: Rig Pin R3 will have a flat end, with a small chamfer.

(a) If you are unable to install R3 rig pin, then the rudder system needs to be adjusted to align this rig pin hole to avoid a possible steering issue in the future.

1) One method of adjusting the rudder system is to check if the rudder trim indication is zero, and positioning the rudder manually over the index plate.

SUBTASK 32-51-00-820-023

CAUTION	MAKE SURE THE END OF THE INPUT ROD WILL COVER AT LEAST ONE HALF OF THE INSPECTION HOLE. A MINIMUM OF THREE THREADS MUST BE OPEN OUTSIDE THE LOCKNUT ON THE CONTROL ROD AT THE CRANK END. INCORRECT THREAD ENGAGEMENT OF THE INPUT ROD CAN CAUSE AN INTERFERENCE AND A POSSIBLE FAILURE OF THE INPUT ROD CAN OCCUR.

(14) Do the steps below:

(a) Adjust the length of the input rod of the rudder pedal so that the bolt [2], which attaches the input rod to the steering crank, fits freely.

(b) Install the bolt [2], washer [3] and nut [4].

(c) Tighten the jamnut on the input rod.

SUBTASK 32-51-00-080-003

(15) Remove all of the rig pins.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-212-002

(16) For Method 3, make sure that the greased plates are under the nose wheels.

NOTE: Plates made of steel are suggested. Plates made of a soft material such as aluminum can be destroyed by the test.

SUBTASK 32-51-00-580-022

CAUTION: MAKE SURE THAT THE SHOCK STRUT IS COMPRESSED. THE CENTERING CAMS WILL BE ENGAGED IF THE SHOCK STRUT IS NOT COMPRESSED THE MINIMUM AMOUNT. THIS CAN CAUSE DAMAGE TO THE AIRCRAFT.

(17) For Method 2, make sure that the shock strut for the NLG is compressed a minimum of 3.5 in. (88.9 mm).

SUBTASK 32-51-00-860-086

CAUTION: HOLD THE UPPER TORSION LINK TO SET THE AIRPLANE NOSE TO THE GROUND MODE. IF YOU DO NOT OBEY, DAMAGE TO THE CONDUIT CAN OCCUR.

(18) For Method 1, hold the upper torsion link up to set the airplane nose to the ground mode.

SUBTASK 32-51-00-420-019

(19) Make sure that the rotary actuator is in ground mode for all methods.

NOTE: When the rotary actuator is in ground mode, the rotary actuator will move the cable drum clockwise. The witness line on the cable drum shall move to a tolerance angle of 102 degrees - 112 degrees with respect to the witness lines on the housing. This is used to determine the position of the rotary actuator.

SUBTASK 32-51-00-860-081

(20) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-51-00-860-047

(21) Remove the NLG towing lever pin, SPL-1499, and allow the towing lever to move to the PRESSURE ON position.

SUBTASK 32-51-00-820-011

(22) Do the steps that follow to check the steering adjustment:

CAUTION: BE CAREFUL WHEN YOU OPERATE THE STEERING SYSTEM OF THE NOSE WHEEL FULL LEFT AND FULL RIGHT. IF YOU DO NOT OBEY, DAMAGE TO THE CONDUIT CAN OCCUR.

(a) Use the steering tiller to operate the steering system of the nose wheel full left and full right.

NOTE: The steering system has a 1 - 2 degree dead band in the center position.

(b) If not within the dead band, do this task: Rudder Pedal Interconnect Mechanism Adjustment, TASK 32-51-00-820-801.

(c) If it is necessary, adjust the length of the rudder input rod so the steering system returns equally on both sides of the "0" mark after turns to the right and left.

SUBTASK 32-51-00-420-007

(23) Make sure that the rudder pedal input rod is correctly connected to the steering crank.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-420-010

> **WARNING** MAKE SURE THAT THE STEERING WHEEL DOES NOT MOVE. IF IT DOES, IT CAN CAUSE ACCIDENTAL MOVEMENT OF THE RUDDER-PEDAL STEERING INTERCONNECTED-MECHANISM. THIS CAN CAUSE INJURY TO PERSONNEL.

(24) Install the locking clips on the turnbuckles of the cables NWS-A and NWS-B.

NOTE: If you are completing this task as a result of installing the steering metering valve (Steering Metering Valve Installation (Without Using Cable Clamp Assembly), TASK 32-51-11-400-801), then the subsequent steps do not apply and you are not required to complete.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-00-420-016

(1) For Method 1, do these steps:

(a) Do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

(b) Install the clamps, brackets and conduit for the Nose Landing Gear/Taxi Light.

SUBTASK 32-51-00-580-023

(2) For Method 2, do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-51-00-580-024

(3) For Method 3, move the airplane off the grease plate.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-410-021

(4) Do the steps that follow to cover the Captain's rig pin hole for the control wheels:

(a) Turn the access cover [14] clockwise.

1) Make sure that the pointer on the Captain's control wheel is within the CENTER band on the access cover [14] marker.

(b) Install the screw [15] to attach the access cover [14].

LOM 443, 444, 464-999

SUBTASK 32-51-00-410-027

(5) Do the steps that follow to cover the Captain's and First Officer's rig pin hole for the control wheels:

(a) Turn the access cover [14] clockwise.

1) Make sure that the pointers on the Captain's and First Officer's control wheels are within the CENTER band on the access cover [14] markers.

(b) Install the screw [15] to attach the access cover [14].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-410-022

(6) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-410-023

(7) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM ALL

SUBTASK 32-51-00-860-104

(8) Close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

SUBTASK 32-51-00-730-059

(9) Do the system test for the Nose Wheel Steering System (TASK 32-51-00-700-801).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3053915 S0000818976_V1

Cable Guard Adjustment
Figure 502/32-51-00-990-807 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE GUARD
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

A

CABLE GUARD CLEARANCE
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

B

3053920 S0000818977_V2

Cable Guard Adjustment
Figure 502/32-51-00-990-807 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE GUARD
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

A

CABLE GUARD CLEARANCE
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

B

3067759 S0000829396_V1

Cable Guard Adjustment
Figure 502/32-51-00-990-807 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-00-820-807

7. Nose Wheel Steering System Adjustment (Adjusting Steering Metering Valve Input Rod Method)

(Figure 501)

A. General

(1) This procedure is to be used only after rigging in accordance with the usual rigging procedure (TASK 32-51-00-820-802).

(2) This task provides a procedure for adjusting the steering system rigging based on the recorded amount of rudder trim required to counteract a steering pulling condition as measured during ground maneuvers.

(3) This is a procedure for adjusting single and dual tiller steering systems only if necessary to improve steering centering characteristics. Prior to making steering adjustments, pilot evaluation of the rudder trim needed to center the steering system, must be recorded. Fewer than 2 units of rudder trim is required for acceptable centering. One (1) unit of rudder trim is equivalent to ¼ degree of steered angle or 0.02 in. (0.05 cm) on the steering marker. The rudder trim that produces satisfactory centering characteristics is used to readjust the steering control system. Initial rigging requires the steering to center equally about the “0” mark when returning from turns from the right and left. After completion of this procedure, the steering does not have to center equally about the “0” mark.

B. References

Reference	Title
12-15-51-780-801	Landing Gear Tire Pressure Check and Tire Servicing (P/B 301)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare to Adjust the Input Rod

SUBTASK 32-51-00-480-029

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-00-200-004

(2) Make sure that all of the tires are properly inflated (TASK 12-15-51-780-801).

SUBTASK 32-51-00-000-001

(3) Put the nose landing gear on grease plates or disconnect the nose gear torsion links at the apex bolt for this adjustment procedure (TASK 32-21-31-000-803).

NOTE: It is necessary to tie up or support the upper torsion link during rigging off jacks at an angle that will not allow the torque link to contact the tires or doors when the system is operated.

F. Adjust the Input Rod

SUBTASK 32-51-00-860-091

(1) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-51-00-080-016

(2) Remove the NLG towing lever pin, SPL-1499.

SUBTASK 32-51-00-210-011

(3) Verify that the rudder trim is set to zero (“0”) (+/- 1/4°).

SUBTASK 32-51-00-710-003

(4) Using the rudder pedals, cycle the system to the left and right and allow it to return to center from each direction.

NOTE: Note the relationship on the indicator mark on the back of the steering collar to the zero (“0”) mark on the decal. There will be a difference in this relationship when returning from the left or returning from the right of up to 1 degree, 0.06 in. (0.15 cm) on the decal, due to the dead band in the steering valve.

SUBTASK 32-51-00-860-092

(5) Set the rudder trim (+/- 1/4°) to the setting the pilot noted for acceptable centering characteristics.

SUBTASK 32-51-00-710-004

(6) Using the rudder pedals, cycle the system to the left and right and allow it to return to center from each direction.

NOTE: Note these relationships of the indicator mark on the back of the steering collar to the zero (“0”) mark on the decal. These are the positions to which the steering must return after adjustments are made.

SUBTASK 32-51-00-860-093

(7) Set the rudder trim back to zero (“0") (+/- 1/4°).

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SUBTASK 32-51-00-860-094

(8) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-00-860-095

WARNING ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(9) Move the towing lever to the "TOW" position and install the NLG towing lever pin, SPL-1499.

SUBTASK 32-51-00-820-032

(10) Make sure that you can install the rig pins from the rigging pin kit, SPL-1585, that follow:

(a) Rig pin NS2 in the Captain's control wheel drum.

(b) Rig pin NS4 in the summing mechanism bracket at the steering metering valve.

(c) Make sure that the rig pins have a free fit.

NOTE: The rig pins must have a free fit when you install or remove them. Some resistance is permitted.

SUBTASK 32-51-00-000-002

(11) Loosen the jamnuts on the input rod.

SUBTASK 32-51-00-820-033

(12) Based on the setting the pilot noted for acceptable centering characteristics, adjust the length of the input rod to correct the steering pulling condition.

NOTE: Turning the hexagonal barrel between the rod ends clockwise when facing aft, lengthens the control rod. One complete revolution clockwise changes the steering angle approximately equivalent to one unit of left rudder trim. One complete revolution counterclockwise changes the steering angle approximately equivalent to one unit of right rudder trim.

SUBTASK 32-51-00-420-011

(13) Tighten the jamnuts.

SUBTASK 32-51-00-860-096

(14) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-51-00-860-097

(15) Remove the NLG towing lever pin, SPL-1499, from the towing lever.

SUBTASK 32-51-00-710-005

(16) Cycle the system to the left and right using the rudder pedals and allow it to return to center from each direction.

SUBTASK 32-51-00-200-006

(17) Compare the centering to what was noted earlier in the task when the rudder was cycled around the trim point the pilot had set.

SUBTASK 32-51-00-860-098

(18) If satisfactory, do this task to remove hydraulic system A pressure: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-00-420-014

(19) Install the safety wire on the input rod.

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(a) Make sure that the safety wire tail is on the aft end of the steering valve input rod when installed.

SUBTASK 32-51-00-200-005

(20) Make sure that the rig pin NS2 in the Captain's control wheel drum does not bind.

NOTE: It is not necessary for rig pin NS4 in the summing mechanism bracket at the steering metering valve to fit freely.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-00-420-015

(1) If it was disconnected, reconnect the nose gear torsion links at the apex bolt (TASK 32-21-31-400-803).

END OF TASK

TASK 32-51-00-700-801

8. Nose Wheel Steering System Test

(Figure 501, Figure 503)

A. General

(1) This task gives instructions to do the test of the steering system of the nose wheel.

(a) There are two methods to perform this task:

1) Method 1: On Ground/Grease Plates

2) Method 2: Airplane on Jacks.

(2) The test of the steering system of the nose wheel includes the tests that follow:

(a) A steering centering test to make sure that the steering metering valve is in the null position when the nose gear is mechanically centered

(b) A normal steering response test

(c) A control wheel torque test

(d) A test of the nose gear turn radius and response to the full rudder pedal input

(e) A tow test of the nose gear steering to make sure that the nose gear will turn freely with the tow lever in the tow position

(f) A test of the alternate steering system

(g) An air/ground mode test.

(3) The steering system of the nose wheel must be adjusted correctly before you do the system test.

(4) The rig pins are from the rigging pin kit, SPL-1585.

B. References

Reference	Title
07-11-03-580-802	Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E (P/B 201)
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
24-22-00-860-811	Supply Electrical Power (P/B 201)

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(Continued)

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-7306	Extension Bar, Steering Test - Torque Link, NLG Part #: C32020-1 Supplier: 81205

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

F. Prepare to Test the Steering System of the Nose Wheel

SUBTASK 32-51-00-610-002

(1) Do servicing on the hydraulic system before you do the test, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

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SUBTASK 32-51-00-480-028

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-00-580-013

(3) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-00-730-057

(4) For Method 2, make sure that the torsion links are connected at apex.

NOTE: It is not necessary to connect conduit and clamps at this time if they are already loose or disconnected.

SUBTASK 32-51-00-860-101

(5) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-51-00-860-012

(6) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-00-860-013

(7) Make sure that the control lever for the landing gear is in the DN position.

SUBTASK 32-51-00-860-014

(8) Make sure that the NOSE WHEEL STEERING ALTERNATE switch is in the NORM position.

SUBTASK 32-51-00-860-015

(9) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

G. Do the Steering Centering Test

SUBTASK 32-51-00-860-016

(1) Remove the NLG towing lever pin, SPL-1499, from the towing lever and permit the lever to move to the PRESSURE ON position.

SUBTASK 32-51-00-860-017

(2) Make sure that the rig pin R3 fits freely in the rudder quadrant.

NOTE: This will show that the rudder pedals are in the neutral position.

SUBTASK 32-51-00-730-002

(3) Make sure that the steering angle is 0 +/-1.5 degrees on the decal that is on the nose gear shock.

NOTE: The inner cylinder centering cam will put the nose wheels in the center position when the airplane is lifted on jacks. Manual assistance could be necessary to make sure that the nose gear and cam is in the center position.

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(a) If the decal is not on the nose gear shock strut, make a decal with tape (Figure 501).

SUBTASK 32-51-00-860-018

> **WARNING** MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-51-00-730-003

(5) Make sure that the nose gear stays centered.

NOTE: If the nose gear moves when the hydraulic system is pressurized, the nose gear steering is not adjusted correctly. There is a disagreement between the steering system and the mechanical centerline position of the nose gear centering cams.

SUBTASK 32-51-00-860-079

(6) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

H. Do the Test of the Normal Steering Response

SUBTASK 32-51-00-480-012

(1) For method 1, make sure that the greased plates are under the nose wheels.

SUBTASK 32-51-00-480-027

(2) For method 1, if necessary, do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-51-00-860-099

> **CAUTION** MAKE SURE THAT YOU PUT THE TORSION LINK TO KEEP CLEARANCE AT THE GEAR DOORS. IF YOU DO NOT OBEY, THE TORSION LINK CAN CAUSE DAMAGE TO THE AFT OF THE GEAR DOORS.

(3) For method 2, do these steps to disconnect the torsion link apex joint:

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(a) Install the NLG towing lever pin, SPL-1499, through the towing lever.

NOTE: The NLG towing lever pin, SPL-1499, holds the towing lever in the TOW position.

(b) Disconnect the torsion link apex joint, do this task: Nose Landing Gear Torsion Link Disconnection, TASK 32-21-31-000-803

1) Put the airplane in ground mode.

2) To avoid damage during operation, remove the bracket that attaches the conduit to the Nose Landing Gear (NLG) landing/taxi light, and other clamps on torsion links.

3) Secure the torsion link assembly to avoid damage during the operation.

(c) Remove the NLG towing lever pin, SPL-1499, from the towing lever.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-860-078

> **WARNING** MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(a) Make sure that at least one of the main gears is in the ground mode.

NOTE: The air/ground system needs two inputs to transition into the ground mode.

SUBTASK 32-51-00-730-047

(5) Do the steps that follow to make sure that the captain's control wheel operates correctly:

(a) Turn the captain's control wheel to operate the nose wheel steering through at least 6 complete cycles, and make sure that it operates freely and smoothly.

NOTE: One cycle of the system is from center to full right, then to full left, then back to center.

(b) Make sure that there is no leakage of hydraulic fluid from the nose gear steering tubing and fittings from the landing gear selector valve to the valves on the steering actuators.

(c) Turn the nose wheels with the captain's control wheel from the center position to the LEFT (CCW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(d) Release the captain's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

(e) Turn the nose wheels with the captain's control wheel from the center position to the RIGHT (CW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(f) Release the captain's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

LOM 443, 444, 464-999

SUBTASK 32-51-00-730-048

(6) Do the steps that follow to make sure the First Officer's control wheel operates correctly:

(a) Turn the First Officer's control wheel to operate the nose wheel steering through at least 6 complete cycles, and make sure that it operates freely and smoothly.

NOTE: One cycle of the system is from center to full right, then to full left, then back to center.

(b) Turn the nose wheels with the First Officer's control wheel from the center position to the LEFT (CCW) stop position.

1) Make sure the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(c) Release the First Officer's control wheel and let it return to the center position.

1) Make sure the steering angle is at 0 +/-1 degree.

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(d) Turn the nose wheels with the First Officer's control wheel from the center position to the RIGHT (CW) stop position.

1) Make sure the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(e) Release the First Officer's control wheel and let it return to the center position.

1) Make sure the steering angle is at 0 +/-1 degree.

LOM ALL

I. Do the Test for Control Wheel Torque

SUBTASK 32-51-00-010-002

(1) Use the control wheel to turn the nose wheels from the center position to the LEFT (CCW) until the steering angle is 70 +/-7 degrees.

NOTE: Secure the torsion link assembly to avoid damage during the operation.

(a) Hold this position.

SUBTASK 32-51-00-480-007

(2) Install a spring scale at 5.0 in. (127.0 mm) radius on the control wheel.

SUBTASK 32-51-00-730-014

(3) Measure the tangential force that is necessary to turn the control wheel to the left (CCW, 78 degrees) and stop just before you touch the control wheel stop.

(a) Make sure that the force on the control wheel is between 9 lbf (40.0 N) and 15 lbf (66.7 N).

SUBTASK 32-51-00-080-008

(4) Remove the spring scale from the control wheel.

SUBTASK 32-51-00-730-035

(5) Use the control wheel to turn the nose wheels from the center position to the RIGHT (CW) until the steering angle is 70 +/-7 degrees.

(a) Hold this position.

SUBTASK 32-51-00-480-013

(6) Install the spring scale at 5.0 in. (127.0 mm) radius on the control wheel.

SUBTASK 32-51-00-730-036

(7) Measure the tangential force that is necessary to turn the control wheel to the right (CW, 78 degrees) and stop just before you touch the control wheel stop.

(a) Make sure that the force on the control wheel is between 9 lbf (40.0 N) and 15 lbf (66.7 N).

SUBTASK 32-51-00-730-016

(8) Release the control wheel and let it go back to the neutral (center) position.

SUBTASK 32-51-00-080-004

(9) Remove the spring scale from the control wheel.

J. Do the Test of Nose Gear Turn Radius and Response to Full Rudder Pedal Input

SUBTASK 32-51-00-480-008

(1) For method 2, make sure that airplane nose gear is in the ground mode.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that at least one of the main gears is in ground mode.

NOTE: The air/ground system needs two inputs to transition into the ground mode. Both of the nose gear sensors are in ground mode by installing actuator (target) on ground proximity sensor or holding the upper torsion link in the ground position.

SUBTASK 32-51-00-730-060

WARNING: BEFORE YOU MOVE THE RUDDER PEDALS, MAKE SURE THE AREA AROUND THE RUDDER IS CLEAR OF ALL PERSONS AND EQUIPMENT. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) Push the captain's left rudder pedal fully.

(a) Make sure that the steering angle is 7 +/- 1 degrees left turn on the decal that is on the nose gear shock strut.

SUBTASK 32-51-00-730-018

(3) Release the rudder pedals.

(a) Make sure that the steering angle is at the center, 0 +/- 1 degrees, on the decal that is on the nose gear shock strut.

SUBTASK 32-51-00-730-019

WARNING: BEFORE YOU MOVE THE RUDDER PEDALS, MAKE SURE THE AREA AROUND THE RUDDER IS CLEAR OF ALL PERSONS AND EQUIPMENT. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Push the captain's right rudder pedal fully.

(a) Make sure that the steering angle is 7 +/- 1 degrees right turn on the decal that is on the nose gear shock strut.

SUBTASK 32-51-00-730-020

(5) Release the rudder pedals.

(a) Make sure that the steering angle is at the center, 0 +/- 1 degrees, on the decal that is on the nose gear shock strut.

K. Do the Nose Gear Steering Tow Test

SUBTASK 32-51-00-860-048

WARNING: ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(1) Move the towing lever to the "TOW" position and install the NLG towing lever pin, SPL-1499.

SUBTASK 32-51-00-860-063

(2) For method 1, remove the apex pin from the torsion links.

SUBTASK 32-51-00-860-100

(3) Move the steering system manually with the upper torsion link, approximately 10 degrees to the left and right, and then return it to the center position.

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(a) If necessary, install the extension bar, SPL-7306, on the nose landing gear to rotate the steering system.

NOTE: If the towing valve does not remove pressure from the steering valve, you cannot move the steering system manually with the upper torsion link. You must then replace the steering valve.

SUBTASK 32-51-00-080-005

WARNING	MAKE SURE THAT THE NOSE WHEEL STEERING SYSTEM IS IN THE CENTER POSITION. WHEN HYDRAULIC POWER IS ON AND THE TOWING LEVER LOCKPIN IS REMOVED, THE STEERING COLLAR AND TOP TORSION LINK WILL TURN QUICKLY TO CENTER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(4) If installed, remove the extension bar, SPL-7306, from the NLG.

SUBTASK 32-51-00-860-089

(5) For method 1, install the apex pin in the torsion links.

SUBTASK 32-51-00-080-017

(6) Remove the NLG towing lever pin, SPL-1499, from the towing lever and permit the lever to move to the PRESSURE ON position.

SUBTASK 32-51-00-730-022

(7) Make sure that the steering system operates normally with the control wheel.

L. Do the Test of the Alternate Steering System

SUBTASK 32-51-00-860-049

(1) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-00-010-028

(2) To get access to the P92 panel, open this access door:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-51-00-860-035

WARNING	WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

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(WARNING PRECEDES)

WARNING	DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(3) Open this circuit breaker and install safety tag:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

SUBTASK 32-51-00-860-036

(4) Make sure that the hydraulic system B reservoir is full, do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

SUBTASK 32-51-00-860-037

(5) For hydraulic system B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-51-00-860-038

(6) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-51-00-730-024

(7) Put the NOSE WHEEL STEERING ALTERNATE switch, on the captain's P1 panel, to the ALT position.

SUBTASK 32-51-00-730-026

(8) Make sure that the steering system operates normally with the control wheel.

SUBTASK 32-51-00-730-027

(9) Put the NOSE WHEEL STEERING ALTERNATE switch, on the captain's P1 panel, to the NORM position.

SUBTASK 32-51-00-730-029

(10) Make sure that the steering system does not operate normally with the control wheel.

M. Do the Test of Air/Ground Mode and Normal Steering Response

SUBTASK 32-51-00-580-017

(1) For method 1, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-00-430-001

(2) For method 2, do these steps to connect the torsion link apex pin:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(a) Install the NLG towing lever pin, SPL-1499, through the towing lever.

NOTE: The NLG towing lever pin, SPL-1499, holds the towing lever in the TOW position.

(b) Connect the torsion link apex pin, do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

(c) Remove the NLG towing lever pin, SPL-1499, from the towing lever.

SUBTASK 32-51-00-730-050

(3) With the nose gear shock strut fully extended, make sure that the steering rotary actuator is in the air mode as follows:

(a) The index marks on the rotary actuator pulley and housing are aligned.

(b) The pulley on the rotary actuator is turned fully counter-clockwise.

SUBTASK 32-51-00-730-051

(4) With the airplane on jacks, do this task: Lift the Airplane Nose Landing Gear with the Axle Jack at Jack Point E, TASK 07-11-03-580-802.

(a) Use the nose gear axle jack to compress the nose gear shock strut 1.90 in. (48.3 mm) to 2.10 in. (53.3 mm) and make sure that the rotary actuator stays in the air mode.

NOTE: The dimensions given in this test are all measured from the bottom of the inner diameter of the outer cylinder.

NOTE: Nose gear axle jack required only for testing while the airplane is jacked.

SUBTASK 32-51-00-730-052

(5) Continue to compress the nose gear shock strut until the rotary actuator changes to the ground mode.

SUBTASK 32-51-00-730-053

(6) Extend the nose gear shock strut back to 1.90 in. (48.3 mm) - 2.10 in. (53.3 mm) of compression and make sure that the rotary actuator moves back to the air mode in 8 seconds or less.

SUBTASK 32-51-00-430-002

(7) Install bracket and clamps for NLG landing/taxi light conduit.

SUBTASK 32-51-00-730-055

(8) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-51-00-730-056

(9) Make sure that the rotary actuator changes to the ground mode.

N. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-00-860-040

(1) For hydraulic system B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-860-041

(2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

SUBTASK 32-51-00-860-102

(3) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 32-51-00-410-002

(4) Install the summing mechanism cover [10] with screws [8] and washers [9].

SUBTASK 32-51-00-860-042

WARNING ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Move the towing lever to the TOW position and install the NLG towing lever pin, SPL-1499.

SUBTASK 32-51-00-860-050

WARNING WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(6) Remove the safety tag and close this circuit breaker:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

SUBTASK 32-51-00-410-026

(7) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-580-007

(8) For method 1, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-00-860-084

(9) For method 2, connect the torsion link apex pin, do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

(a) Reconnect the clamps, brackets and conduit attached to the Nose Landing Gear/Taxi light.

SUBTASK 32-51-00-080-009

(10) For method 1, remove the greased plates from under the nose wheels.

SUBTASK 32-51-00-580-004

(11) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G15538 S0006575745_V2

Proximity Switch Electronics Unit (PSEU)
Figure 503/32-51-00-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE WHEEL STEERING SYSTEM - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This task has the data for a detailed visual inspection of the nose wheel steering system mechanism.

TASK 32-51-00-200-801

2. Nose Wheel Steering System Mechanism Inspection

(Figure 601)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

D. Prepare for the Nose Wheel Steering System Mechanism Inspection

SUBTASK 32-51-00-480-024

> **WARNING** MAKE SURE THE LANDING GEAR DOWNLOCK PINS ARE INSTALLED. THIS WILL PREVENT ACCIDENTAL RETRACTION OF THE LANDING GEAR, INJURY TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-00-860-077

> **WARNING** REMOVE HYDRAULIC POWER FOR THE NOSE WHEEL STEERING BEFORE YOU DO THE CHECK. HYDRAULIC POWER CAN CAUSE THE NOSE WHEELS TO MOVE. INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

E. Nose Wheel Steering System Mechanism Visual Inspection

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-010-009

(1) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-010-024

(2) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

LOM ALL

SUBTASK 32-51-00-010-021

(3) Remove the Map/Chart Light Control Module.

NOTE: It may be necessary to use an inspection mirror to perform the inspection through the Map/Chart Light Control Module opening.

SUBTASK 32-51-00-010-010

(4) Remove the screws [8], washers [9], and summing mechanism cover [10].

SUBTASK 32-51-00-210-010

(5) Do a detailed visual inspection of the mechanical control path for the nose wheel steering system mechanism.

SUBTASK 32-51-00-410-004

(6) Install the summing mechanism cover [10] with the washers [9] and screws [8].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-00-410-005

(7) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM 443, 444, 464-999

SUBTASK 32-51-00-410-019

(8) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM ALL

SUBTASK 32-51-00-410-016

(9) Install the Map/Chart Light Control Module.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

D72762 S0000163966_V4

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 1 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

D72766 S0000163967_V4

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 2 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D72774 S0000163968_V3

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 3 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S CONTROL WHEEL
(FIRST OFFICER'S CONTROL WHEEL IS EQUIVALENT)

B

1 NWSA CABLE IS INSTALLED FORWARD FOR CAPTAIN'S CONTROL WHEEL.

2 NWSB CABLE IS INSTALLED FORWARD FOR FIRST OFFICER'S CONTROL WHEEL.

D72779 S0000163969_V3

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 4 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL

C

D72784 S0000163970_V3

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 5 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S RUDDER FORWARD QUADRANT

D

D72788 S0000163971_V2

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 6 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D72880 S0000163974_V4

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 7 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G

D72889 S0000163975_V3

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 8 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL

H

D72894 S0000163977_V3

Nose Wheel Steering System Mechanism Inspection
Figure 601/32-51-00-990-803 (Sheet 9 of 9)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1. General

A. This procedure provides instructions to clean the nose wheel steering towing lever [1], crank [2] and plunger [3].

TASK 32-51-11-100-801

2. Clean the Exterior Surfaces of the Towing Lever Assembly

(Figure 201)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
B00130	Alcohol - Isopropyl	TT-I-735

D. Prepare for Cleaning

SUBTASK 32-51-11-480-008

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlocks are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Clean the Towing Lever Assembly

SUBTASK 32-51-11-100-001

CAUTION DO NOT TRY TO DISASSEMBLE THE TOWING LEVER PLUNGER TO CLEAN IT. DAMAGE TO INTERNAL COMPONENTS WILL OCCUR.

(1) Use a clean cloth, moistened in isopropyl alcohol, B00130, to clean the towing lever [1], crank [2] and plunger [3] to remove dirt, grease and grime. Be sure to remove the debris that is stuck between the bushings in the valve housing, where the most stickiness occurs.

NOTE: Isopropyl alcohol is the most effective cleaner that will not damage the valve seals and finishes.

(a) If necessary, disassemble the towing crank [2] and towing lever [1] as follows:

1) Remove the cotter pin, nut, washers and bolt from the towing lever crank [2] and remove the towing lever [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Remove the towing crank [2] and cup washer, if installed, from the valve housing.
3) Clean the bushings in the valve housing and area in between them.
4) Install the towing crank [2] into the valve housing.
5) Install the cup washer (if installed) and towing lever [1] onto the towing crank splines.
   a) Orient splines so that the bolt can be installed through the hole in the towing lever [1].
   b) Use a rig pin from the rigging pin kit, SPL-1585, to line up the holes in the manifold and towing crank [2].
6) Install the bolt with the washer under head through the towing lever [1] and towing crank [2].
7) Install the remaining washer onto the bolt, then install the nut and rig pin from the rigging pin kit, SPL-1585, to hold the towing lever [1] in place.
8) Tighten the nut to a torque value of 40 to 45 inch-pounds (4.5 to 5.1 N-m), as required, to line up the slot in the nut with the hole in the bolt.
9) Install the cotter pin.

SUBTASK 32-51-11-212-001

(2) Check the operation of the towing lever [1] and plunger [3].

NOTE: Lubrication of the towing lever or plunger is not recommended as this will attract dirt and grime.

(a) The towing lever [1] and plunger [3] must return to the normal position when released.

(b) There must be no external leakage or evidence of instability, sticking or binding of the towing lever [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR

J62341 S0000173619_V2

Nose Wheel Steering System - Towing Lever Assembly
Figure 201/32-51-11-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STEERING METERING VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the steering metering valve (without using cable clamp assembly)

(2) An installation of the steering metering valve (without using cable clamp assembly)

(3) A removal of the steering metering valve (using cable clamp assembly)

(4) An installation of the steering metering valve (using cable clamp assembly).

B. In this procedure, the steering metering valve is referred to as valve assembly.

TASK 32-51-11-000-801

2. Steering Metering Valve Removal (Without Using Cable Clamp Assembly)

(Figure 401)

A. References

Reference	Title
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Removal

SUBTASK 32-51-11-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-11-010-003

(2) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

(Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801)

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

SUBTASK 32-51-11-860-001

(3) Make sure that the wheels of the nose landing gear are in the centered position.

SUBTASK 32-51-11-480-007

(4) Install these rig pins from the rigging pin kit, SPL-1585, set:

(a) Rig pin 2 in the nose wheel steering tiller

(b) Rig pins NS 1 in the rudder pedal interconnect quadrant

(c) Rig pin 4 in the summing mechanism.

SUBTASK 32-51-11-860-002

(5) Remove the pressure from hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-11-860-011

(6) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-51-11-860-003

(7) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

SUBTASK 32-51-11-860-004

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(8) Install the NLG towing lever pin, SPL-1499, through the towing lever.

NOTE: You use the NLG Towing Lever Lock Pin to hold the towing lever in the TOW position.

F. Steering Metering Valve Removal

SUBTASK 32-51-11-010-001

(1) Remove the screws [4] and washers [5] that hold the summing mechanism cover [10] to the summing mechanism bracket.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-11-010-002

(2) Remove the screws [9] and washers [5] that hold the support bracket to the valve assembly [7].

SUBTASK 32-51-11-020-002

(3) Loosen the cable NWS-A [1], cable NWS-B [2], and cable NWS-A/B [8] at the turnbuckles [3].

SUBTASK 32-51-11-020-003

(4) Remove the nut [23], washer [5], bushing [24], and bolt [25] to disconnect the link assembly [6] from the input lever on the valve assembly [7].

SUBTASK 32-51-11-020-004

(5) Disconnect the hydraulic lines [11] from the valve assembly [7].

SUBTASK 32-51-11-480-003

(6) Install caps in the hydraulic lines [11] and plugs in the ports on the valve assembly [7].

SUBTASK 32-51-11-020-010

(7) Remove the lockwire from the bolts [20].

SUBTASK 32-51-11-020-005

(8) Remove the bolts [20] and washers [18] that hold the valve assembly [7] to the top and bottom support plates.

SUBTASK 32-51-11-020-006

(9) Remove the nuts [14], washers [15], washers [18], and bolts [19] that hold the valve assembly [7] to the top support plate.

SUBTASK 32-51-11-020-007

CAUTION THE STEERING METERING VALVE IS TOP HEAVY. THE VALVE WILL FLIP OUT OF YOUR HOLD. BE CAREFUL NOT TO DROP AND DAMAGE THE STEERING METERING VALVE.

(10) Remove the nuts [16], bolts [22], washers [21], and clamps [17] that attach the swivel valves to the steering actuator trunnions and carefully remove the valve assembly [7].

(a) Make sure that the area around and in the trunnions is clean before the hydraulic ports are open.

NOTE: This is to prevent contamination. The hydraulic ports will be open when you remove the swivel valves from the actuator trunnions.

(b) Install lockwire in the top of the swivel valves to keep them in the valve assembly [7].

CAUTION DO NOT REMOVE THE SWIVEL VALVES FROM THE STEERING METERING VALVE. IF YOU DO NOT OBEY, DAMAGE TO THE MATING SURFACES OF THE SWIVEL VALVES AND THE STEERING METERING VALVE CAN OCCUR.

1) Do not remove the swivel valves from the valve assembly [7].

SUBTASK 32-51-11-480-004

(11) Install caps in the open hydraulic ports for the swivel valves (that are part of the valve assembly [7]) and actuator trunnions.

SUBTASK 32-51-11-020-008

(12) Remove the unions [12] and packings [13] from the valve assembly [7].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-11-480-005

(13) Install plugs in the ports.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

F61824 S0006575749_V2

Steering Metering Valve Installation
Figure 401/32-51-11-990-801 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F61934 S0006575750_V2

Steering Metering Valve Installation
Figure 401/32-51-11-990-801 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F70086 S0006575751_V2

Steering Metering Valve Installation
Figure 401/32-51-11-990-801 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F71167 S0006575752_V3

Steering Metering Valve Installation
Figure 401/32-51-11-990-801 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F

F73376 S0006575753_V3

Steering Metering Valve Installation
Figure 401/32-51-11-990-801 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F73374 S0006575754_V3

Steering Metering Valve Installation
Figure 401/32-51-11-990-801 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-11-400-801

3. **Steering Metering Valve Installation (Without Using Cable Clamp Assembly)**
(Figure 401)

A. **References**

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
32-51-00-820-802	Nose Wheel Steering System Adjustment (P/B 501)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G02166	Lockwire - MS20995NC20, Monel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	Valve assembly	32-51-11-01A-055	LOM ALL
13	Packing	32-51-11-01A-065	LOM ALL
27	Packing	32-51-51-01A-175	LOM ALL
28	O-ring	32-51-51-01A-180	LOM ALL

E. **Location Zones**

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

F. **Access Panels**

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Steering Metering Valve Installation

SUBTASK 32-51-11-600-001

> **CAUTION**
> THE STEERING METERING VALVE IS TOP HEAVY. THE VALVE WILL FLIP OUT OF YOUR HOLD. BE CAREFUL NOT TO DROP AND DAMAGE THE STEERING METERING VALVE.

(1) Do these steps to prepare the valve assembly [7] for installation:

(a) Lubricate the new packings [13] and unions [12] with hydraulic fluid, D00153.

(b) Install the packings [13] and unions [12] in the valve assembly [7].

(c) Apply hydraulic fluid, D00153, to the transfer tubes in the actuator trunnions.

(d) Install the new O-rings [28] and new packing [27] on both of the tube [26] between the valve assembly [7] and steering cylinders.

SUBTASK 32-51-11-620-001

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

> **CAUTION**
> DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(2) Apply corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the faying surfaces of all four mounting feet on the valve assembly [7].

SUBTASK 32-51-11-620-002

(3) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The shank of the bolts [19]

(b) The shank, threads, and thread reliefs of the bolts [20]

(c) The threads of the nuts [14]

(d) The splines and faces of the washers [15] and washers [18].

SUBTASK 32-51-11-020-009

> **CAUTION**
> MAKE SURE THAT THE OFFSET HOLE PATTERN IN THE SWIVEL VALVES FOR THE VALVE ASSEMBLY ARE CORRECTLY ALIGNED WITH THE MATING HOLE PATTERN IN THE ACTUATOR TRUNNION. IF YOU DO NOT OBEY, IT IS POSSIBLE THAT THE STEERING SYSTEM WILL NOT OPERATE CORRECTLY AND YOU CAN CAUSE DAMAGE TO THE STEERING SYSTEM.

(4) Put the swivel valves for the valve assembly [7] into the steering actuator trunnions and make sure the offset hole pattern in the swivel valves is aligned with the mating hole pattern in the left and right trunnions.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-11-420-002

(5) Install the clamps [17], washers [21], bolts [22], and nuts [16] to attach the valve assembly [7] to the actuator trunnions.

(a) If it is installed, remove the lockwire from the swivel valves.

SUBTASK 32-51-11-420-003

(6) Install the bolts [19], washers [15], washers [18], and nuts [14] to attach the valve assembly [7] to the top support plate.

SUBTASK 32-51-11-420-004

(7) Install the bolts [20] and washers [18] to attach the valve assembly [7] to the top and bottom support plates.

SUBTASK 32-51-11-420-025

(8) Install MS20995NC20 lockwire, G02166, on the bolts [20] (TASK 20-10-44-400-801).

SUBTASK 32-51-11-420-010

(9) Install the screws [9] and washers [5] that hold the support bracket to the valve assembly [7].

SUBTASK 32-51-11-480-006

(10) Make sure that these rig pins from the rigging pin kit, SPL-1585, set are installed:

(a) Rig pin 2 in the steering tiller for the nose wheel

(b) Rig pin NS1 in the rudder pedal interconnect quadrant

(c) Rig pin 4 in the summing mechanism.

SUBTASK 32-51-11-420-005

(11) Install the bushing [24], bolt [25], washer [5], and nut [23] to attach the link assembly [6] to the input lever on the valve assembly [7].

(a) Adjust the link assembly [6] until you can easily install bolt [25].

(b) Remove the rig pin 4 from the summing mechanism.

SUBTASK 32-51-11-080-001

(12) Remove the caps from the hydraulic lines [11] and ports on the valve assembly [7].

SUBTASK 32-51-11-420-006

(13) Connect the hydraulic lines [11] to the valve assembly [7].

SUBTASK 32-51-11-420-023

(14) Tighten the B-nuts on the hydraulic lines [11] to 270 ±14 in-lb (31 ±2 N·m).

SUBTASK 32-51-11-420-007

(15) Tighten the cable NWS-A [1], cable NWS-B [2], and cable NWS-A/B [8] at the turnbuckles [3] and adjust the tension.

NOTE: This task will make you perform the required system test. Look for hydraulic leaks when you do this.

(a) Tighten the cables and adjust the tension, do this task: Nose Wheel Steering System Adjustment, TASK 32-51-00-820-802.

SUBTASK 32-51-11-080-002

(16) Remove these rig pins:

(a) Rig pin 2 in the steering tiller for the nose wheel

(b) Rig pin NS 1 in the rudder pedal interconnect quadrant.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-11-410-001

(17) Close these access panels:

(Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801)

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

SUBTASK 32-51-11-420-011

(18) Do a test on the steering system of the nose wheel, do the following steps from this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801:

- General
- Prepare the Airplane for Testing
- Do the Test of the Normal Steering Response
- Do the Test for the Control Wheel Torque
- Do the Test of Nose Gear Turn Radius and Response to Full Rudder Pedal Input
- Do the Nose Gear Steering Tow Test
- Put the Airplane in its Usual Condition.

(a) Make sure that there is no leakage.

SUBTASK 32-51-11-420-008

(19) Put the summing mechanism cover [10] in position and install the screws [4] and washers [5].

——— END OF TASK ———

TASK 32-51-11-000-803

4. Steering Metering Valve Removal (Using Cable Clamp Assembly)

(Figure 402, Figure 403)

A. References

Reference	Title
29-09-00-860-802	Hydraulic Reservoirs Depressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-13966	Clamp Assy - Steering Cables, NLG Part #: C32055-1 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Prepare for the Removal

SUBTASK 32-51-11-480-009

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-11-860-006

(2) Make sure that the wheels of the nose landing gear are in the centered position.

SUBTASK 32-51-11-480-010

(3) Install this rig pin from the rigging pin kit, SPL-1585, set:

(a) Rig pin 4 in the summing mechanism.

SUBTASK 32-51-11-860-007

(4) Remove the pressure from hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-11-860-012

(5) For hydraulic system A, do this task: Hydraulic Reservoirs Depressurization, TASK 29-09-00-860-802.

SUBTASK 32-51-11-860-008

(6) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

SUBTASK 32-51-11-860-009

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(7) Install the NLG towing lever pin, SPL-1499, through the towing lever.

NOTE: You use the NLG Towing Lever Lock Pin to hold the towing lever in the TOW position.

E. Steering Metering Valve Removal

SUBTASK 32-51-11-010-004

(1) Remove the screws [4] and washers [5] that hold the summing mechanism cover [10] to the summing mechanism bracket.

SUBTASK 32-51-11-010-005

(2) Remove the screws [9] and washers [5] that hold the support bracket to the valve assembly [7].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-11-020-013

(3) Use the cable clamp, SPL-13966, to remove the tension in steering cables NWS-A and NWS-B between the trunnion and the link assembly (Figure 403).

NOTE: You may need to remove one of the slider bolts in order to install the base plate over the cables.

(a) Position the base plate against the trunnion, with steering cables positioned in the base plate grooves.

NOTE: Use the Lock-Trunnion Nut to align the base plate into position.

(b) Tighten the clamp bolts evenly to 70 in-lb (8 N·m) - 80 in-lb (9 N·m) onto the clamp plate.

(c) Turn only the tension bolt until the clamp carrier contacts the head of the slider bolts.

1) Make sure that you do not exceed a maximum of 0.10 in. (0.25 cm) of cable stretch.

SUBTASK 32-51-11-020-014

(4) Remove the pulleys [30] to loosen cable assembly [29].

(a) Remove the nuts [34], washers [33], washers [35], bolts [32], cable guards [31], and pulleys [30] from their brackets.

SUBTASK 32-51-11-020-015

(5) Remove the nut [23], washer [5], bushing [24], and bolt [25] to disconnect the link assembly [6] from the input lever on the valve assembly [7].

SUBTASK 32-51-11-020-016

(6) Disconnect the hydraulic lines [11] from the valve assembly [7].

SUBTASK 32-51-11-480-011

(7) Install caps in the hydraulic lines [11] and plugs in the ports on the valve assembly [7].

SUBTASK 32-51-11-020-017

(8) Remove the lockwire from the bolts [20].

SUBTASK 32-51-11-020-018

(9) Remove the bolts [20] and washers [18] that hold the valve assembly [7] to the top and bottom support plates.

SUBTASK 32-51-11-020-019

(10) Remove the nuts [14], washers [15], washers [18], and bolts [19] that hold the valve assembly [7] to the top support plate.

SUBTASK 32-51-11-020-020

CAUTION

THE STEERING METERING VALVE IS TOP HEAVY. THE VALVE WILL FLIP OUT OF YOUR HOLD. BE CAREFUL NOT TO DROP AND DAMAGE THE STEERING METERING VALVE.

(11) Remove the nuts [16], bolts [22], washers [21], and clamps [17] that attach the swivel valves to the steering actuator trunnions and carefully remove the valve assembly [7].

(a) Make sure that the area around and in the trunnions is clean before the hydraulic ports are open.

NOTE: This is to prevent contamination. The hydraulic ports will be open when you remove the swivel valves from the actuator trunnions.

(b) Install lockwire in the top of the swivel valves to keep them in the valve assembly [7].

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CAUTION DO NOT REMOVE THE SWIVEL VALVES FROM THE STEERING METERING VALVE. IF YOU DO NOT OBEY, DAMAGE TO THE MATING SURFACES OF THE SWIVEL VALVES AND THE STEERING METERING VALVE CAN OCCUR.

1) Do not remove the swivel valves from the valve assembly [7].

SUBTASK 32-51-11-480-012

(12) Install caps in the open hydraulic ports for the swivel valves (that are part of the valve assembly [7]) and actuator trunnions.

SUBTASK 32-51-11-020-021

(13) Remove the unions [12] and packings [13] from the valve assembly [7].

SUBTASK 32-51-11-480-013

(14) Install plugs in the ports.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2242276 S0000502092_V2

Steering Metering Valve Installation
Figure 402/32-51-11-990-804 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2242426 S0000502093_V2

Steering Metering Valve Installation
Figure 402/32-51-11-990-804 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2242290 S0000502094_V3

Steering Metering Valve Installation
Figure 402/32-51-11-990-804 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2242404 S0000502095_V2

Steering Metering Valve Installation
Figure 402/32-51-11-990-804 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Steering Cables Clamp Assembly
Figure 403/32-51-11-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-11-400-802

5. **Steering Metering Valve Installation (Using Cable Clamp Assembly)**
(Figure 402, Figure 403)

A. **References**

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-13966	Clamp Assy - Steering Cables, NLG Part #: C32055-1 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G02166	Lockwire - MS20995NC20, Monel - 0.020 Inch (0.508 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	Valve assembly	32-51-11-01A-055	LOM ALL
13	Packing	32-51-11-01A-065	LOM ALL
27	Packing	32-51-51-01A-175	LOM ALL
28	O-ring	32-51-51-01A-180	LOM ALL

E. **Location Zones**

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

F. **Steering Metering Valve Installation**

SUBTASK 32-51-11-600-002

(1) Do these steps to prepare the valve assembly [7] for installation:

(a) Lubricate the new packings [13] and unions [12] with hydraulic fluid, D00153.

(b) Install the packings [13] and unions [12] in the valve assembly [7].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Apply hydraulic fluid, D00153, to the transfer tubes in the actuator trunnions.

(d) Install the new O-rings [28] and new packing [27] on both of the tube [26] between the valve assembly [7] and steering cylinders.

SUBTASK 32-51-11-620-003

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

CAUTION	DO NOT APPLY CORROSION-INHIBITING COMPOUND ON GREASE JOINTS, OR SEALED BEARINGS. THESE COMPOUNDS REMOVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS. THEY WILL MOVE AROUND THE SEALS AND INTO THE BEARINGS. THIS WILL CAUSE DAMAGE TO THE BEARINGS, AND JOINTS.

(2) Apply corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the faying surfaces of all four mounting feet on the valve assembly [7].

SUBTASK 32-51-11-620-004

(3) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to these items:

(a) The shank of the bolts [19]

(b) The shank, threads, and thread reliefs of the bolts [20]

(c) The threads of the nuts [14]

(d) The splines and faces of the washers [15] and washers [18].

SUBTASK 32-51-11-020-022

CAUTION	CORRECTLY ALIGN THE INDEX PINS ON THE SWIVEL VALVES WITH THE MATING HOLES IN THE ACTUATOR TRUNNION. IF YOU DO NOT, YOU CAN CAUSE DAMAGE TO THE STEERING SYSTEM.

(4) Put the swivel valves for the valve assembly [7] into the steering actuator trunnions and make sure that the offset hole pattern in the swivel valves is aligned with the mating hole pattern in the left and right trunnions.

SUBTASK 32-51-11-420-014

(5) Install the clamps [17], washers [21], bolts [22], and nuts [16] to attach the valve assembly [7] to the actuator trunnions.

(a) If it is installed, remove the lockwire from the swivel valves.

SUBTASK 32-51-11-420-015

(6) Install the bolts [19], washers [15], washers [18], and nuts [14] to attach the valve assembly [7] to the top support plate.

SUBTASK 32-51-11-420-016

(7) Install the bolts [20] and washers [18] to attach the valve assembly [7] to the top and bottom support plates.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-11-420-026

(8) Install MS20995NC20 lockwire, G02166, on the bolts [20] (TASK 20-10-44-400-801).

SUBTASK 32-51-11-420-017

(9) Install the screws [9] and washers [5] that hold the support bracket to the valve assembly [7].

SUBTASK 32-51-11-480-014

(10) Make sure that this rig pin from the rigging pin kit, SPL-1585, set is installed:

(a) Rig pin 4 in the summing mechanism.

SUBTASK 32-51-11-420-018

(11) Install the bushing [24], bolt [25], washer [5], and nut [23] to attach the link assembly [6] to the input lever on the valve assembly [7].

(a) Adjust thelink assembly [6] until you can easily install bolt [25].

(b) Remove the rig pin 4 from the summing mechanism.

SUBTASK 32-51-11-080-003

(12) Remove the caps from the hydraulic lines [11] and the ports on the valve assembly [7].

SUBTASK 32-51-11-420-019

(13) Connect the hydraulic lines [11] to the valve assembly [7].

SUBTASK 32-51-11-420-024

(14) Tighten the B-nuts on the hydraulic lines [11] to 270 ±14 in-lb (31 ±2 N·m).

SUBTASK 32-51-11-420-020

(15) Install the pulleys [30].

(a) Put the cable assembly [29] in the groove of the pulleys [30].

(b) Install the pulleys [30], cable guards [31], bolts [32], washers [33], washers [35], and nuts [34] on their brackets on the top of the outer cylinder.

SUBTASK 32-51-11-080-004

(16) Remove the cable clamp, SPL-13966.

SUBTASK 32-51-11-420-021

(17) Do a test on the steering system of the nose wheel, do the following steps from this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801:

- General
- Prepare the Airplane for Testing
- Do the Test of the Normal Steering Response
- Do the Test for the Control Wheel Torque
- Do the Test of Nose Gear Turn Radius and Response to Full Rudder Pedal Input
- Do the Nose Gear Steering Tow Test
- Put the Airplane in its Usual Condition.

(a) Make sure that there is no leakage.

SUBTASK 32-51-11-420-022

(18) Put the summing mechanism cover [10] in position and install the screws [4] and washers [5].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER PEDAL STEERING MECHANISM - REMOVAL/INSTALLATION

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) A removal of the interconnect spring for the rudder pedal steering mechanism.

(2) An installation of the interconnect spring for the rudder pedal steering mechanism.

(3) A removal of the rudder pedal steering mechanism (referred to as the pedal instl [1]) and the nose gear position cables (referred to as the cable assy [19] or the cable assy [20]).

(4) An installation of the rudder pedal steering mechanism and the nose gear position cables.

(5) A visual inspection of the rudder pedal steering mechanism.

TASK 32-51-21-000-803

2. Interconnect Spring - Removal

Figure 401

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

C. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

D. Prepare for the Removal

SUBTASK 32-51-21-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-21-860-003

(2) Make sure the wheels of the nose landing gear are in the centered position.

SUBTASK 32-51-21-860-004

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Interconnect Spring Removal

SUBTASK 32-51-21-010-003

(1) Open the access panels on the left sidewall and the top of the nose wheel well to get access to the pedal instl Mechanism [1] and cable turnbuckles Figure 401.

SUBTASK 32-51-21-010-004

(2) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

SUBTASK 32-51-21-020-012

(3) Remove the Spring [23].

(a) Remove the Bolt [24], Washer [25], Spacer [26], Washer [27] and Nut [28] to disconnect the spring. Figure 401

——— END OF TASK ———

TASK 32-51-21-400-802

3. Interconnect Spring - Installation

(Figure 401)

A. References

Reference	Title
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
23	Spring	27-21-31-05-175	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
		27-21-31-05-178	LOM 465-999

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

D. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

E. Interconnect Spring Installation

SUBTASK 32-51-21-420-013

(1) Install the Spring [23].

(a) Install the Bolt [24], Washer [25], Spacer [26], Washer [27] and Nut [28] to reconnect the spring Figure 401.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-21-410-003

(2) Close the access panels in the wheel well that you opened to get access to the pedal Mechanism [1] and turnbuckles Figure 401.

SUBTASK 32-51-21-410-004

(3) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

——— END OF TASK ———

TASK 32-51-21-000-801

4. Rudder Pedal Steering Mechanism Removal

(Figure 401)

A. References

Reference	Title
20-10-96-000-801	Control Cable End Retaining Plate - Removal (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

D. Prepare for the Removal

SUBTASK 32-51-21-480-001

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-21-860-001

(2) Make sure that the wheels of the nose landing gear are in the centered position.

SUBTASK 32-51-21-860-002

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Steering Mechanism Removal

SUBTASK 32-51-21-010-005

(1) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

SUBTASK 32-51-21-020-009

(2) Remove the clips from the turnbuckles.

SUBTASK 32-51-21-020-001

(3) Loosen the NWS-A cable, the Cable NGPP-A [19], and the Cable NGPP-B [20] at the turnbuckles.

SUBTASK 32-51-21-020-002

(4) Remove the nut [10], washer [11], and bolt [12] to disconnect the idler rod at the structure.

SUBTASK 32-51-21-020-003

(5) Remove the nuts [2], washers [3], and screws [5] on the ends of the quadrant for the pedal Mechanism [1].

SUBTASK 32-51-21-480-002

(6) Remove the plates [4] from the cable ends on the quadrant to disconnect the NWS-A cable (Control Cable End Retaining Plate - Removal, TASK 20-10-96-000-801).

SUBTASK 32-51-21-020-004

(7) Disconnect the Cable NGPP-A [19] and the Cable NGPP-B [20] at the turnbuckles.

SUBTASK 32-51-21-020-005

(8) Remove the lockwire Shaft [15], washers [14], and bolts [13] to disconnect the pedal Mechanism [1] from the rudder pedal jack shaft assembly.

SUBTASK 32-51-21-020-006

(9) Remove the nut [9] and washer [8] from the bolt [6] on the upper support bracket.

SUBTASK 32-51-21-020-007

(10) Hold the bolt [6], straighten the tabs on the retainer [7], and remove the bolt [6].

SUBTASK 32-51-21-000-001

(11) Remove the pedal Mechanism [1] complete with the Cable NGPP-A [19] and the Cable NGPP-B [20].

SUBTASK 32-51-21-020-008

(12) Remove and discard the retainer [7].

SUBTASK 32-51-21-020-010

(13) To remove the Cable NGPP-A [19] and the Cable NGPP-B [20] from the Eccentric [18] on the pedal Mechanism [1], do these steps:

(a) Remove the Nut [21] and Washer [22] from the Shaft [15].

(b) Move the Shaft [15] out far enough to get access to the Bolt [16] and Nut [17].

(c) Remove the Nut [17] and Bolt [16].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Move the Eccentric [18] out and remove the Cable NGPP-A [19] and the Cable NGPP-B [20].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F81590 S0006575760_V2

Rudder Pedal Steering Mechanism
Figure 401/32-51-21-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F81640 S0006575761_V2

Rudder Pedal Steering Mechanism
Figure 401/32-51-21-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Rudder Pedal Steering Mechanism
Figure 401/32-51-21-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H32658 S0006575763_V4

Rudder Pedal Steering Mechanism
Figure 401/32-51-21-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-21-400-801

5. Rudder Pedal Steering Mechanism Installation

(Figure 401)

A. References

Reference	Title
20-10-96-400-801	Control Cable End Retaining Plate - Installation (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
32-51-00-820-801	Rudder Pedal Interconnect Mechanism Adjustment (P/B 501)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Mechanism	27-21-31-05-370	LOM ALL

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

E. Steering Mechanism Installation

SUBTASK 32-51-21-420-009

(1) To install Cable NGPP-A [19] and the Cable NGPP-B [20], on the Eccentric [18] on the pedal Mechanism [1], do these steps:

(a) Move the Eccentric [18] out and install the Cable NGPP-A [19] and Cable NGPP-B [20].

(b) Move the Eccentric [18] into its position and install the Nut [17] and Bolt [16].

(c) Install the Shaft [15].

(d) Install the Washer [22] and the Nut [21] on the Shaft [15].

1) Torque the Nut [21] to 100 in-lb (11.3 N·m) above the run-on torque.

SUBTASK 32-51-21-420-001

(2) Install a new retainer [7].

SUBTASK 32-51-21-420-002

(3) Put the pedal Mechanism [1], complete with the Cable NGPP-A [19] and the Cable NGPP-B [20], in position.

NOTE: Make sure that there is clearance between the clutch crank and the end of the bolt that holds the rudder pedal steering quadrant to the clutch arm.

SUBTASK 32-51-21-420-003

(4) Install the bolt [6], washer [8], and nut [9] through the pedal Mechanism [1] and the upper support bracket.

(a) Torque the nut [9] to approximately 65 in-lb (7.34 N·m) above the run-on torque.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-21-420-004

(5) Bend the tabs on the retainer [7] to hold the bolt [6].

SUBTASK 32-51-21-420-005

(6) Put the Cable NGPP-A [19] and the Cable NGPP-B [20], through the fairleads and connect them at the turnbuckles.

SUBTASK 32-51-21-420-006

(7) Put the NWS-A cable in the plates [4] and install the screws [5], washers [3], and nuts [2] to attach the cable ends to the quadrant (Control Cable End Retaining Plate - Installation, TASK 20-10-96-400-801).

SUBTASK 32-51-21-420-007

(8) Install the bolt [12], washer [11], and nut [10] to attach the idler rod to the structure.

SUBTASK 32-51-21-420-008

(9) Install the bolts [13] and washers [14] to attach the steering arm to the rudder pedal jack shaft assembly.

SUBTASK 32-51-21-420-010

(10) Install lockwire on the bolt [13].

SUBTASK 32-51-21-820-001

(11) Tighten the NWS-A cable, the Cable NGPP-A [19] and the cable assy Cable NGPP-B [20] and adjust the tension, do this task: Rudder Pedal Interconnect Mechanism Adjustment, TASK 32-51-00-820-801.

SUBTASK 32-51-21-700-001

(12) Do a test of the steering system of the nose wheel, do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801.

SUBTASK 32-51-21-420-011

(13) Install the clips on the turnbuckles.

SUBTASK 32-51-21-410-005

(14) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

——— END OF TASK ———

TASK 32-51-21-000-802

6. Rudder Pedal Steering Mechanism Visual Inspection

(Figure 402, Figure 403)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Access Panels

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

D. Steering Mechanism Inspection

SUBTASK 32-51-21-010-002

(1) Open the access panels on the left sidewall and the top of the nose wheel well to get access to the rudder pedal steering mechanism and cable turnbuckles.

SUBTASK 32-51-21-010-007

(2) Open these access panels to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

SUBTASK 32-51-21-210-001

(3) Do a detail visual inspection of the rotary actuator and mechanical control path for the rudder pedal steering mechanism.

SUBTASK 32-51-21-211-001

(4) Do a visual inspection to verify that nut that provides retention of the rudder pedal steering mechanism to the upper support bracket is seated correctly.

NOTE: A small telescoping mirror will be required to view this area via the forward EE bay

SUBTASK 32-51-21-410-008

(5) Close the access panels on the left sidewall and the top of the nose wheel well that you opened to get access to the rudder pedal steering mechanism and cable turnbuckles.

SUBTASK 32-51-21-410-007

(6) Close these access panels:

Number	Name/Location
113AC	Fwd Nose Wheel Well Upper Access Panel
113AW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1853477 S0000331744_V2

Rudder Pedal Steering Retainer Nut Inspection
Figure 402/32-51-21-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ACCESS PANELS
(NOSE LANDING GEAR WHEEL WELL)

A

2246052 S0000503404_V2

Rudder Pedal Steering Mechanism Control Path Inspection
Figure 403/32-51-21-990-803 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

D72854 S0000163973_V3

Rudder Pedal Steering Mechanism Control Path Inspection
Figure 403/32-51-21-990-803 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STEERING SYSTEM CABLES - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the position cables for the nose gear steering (referred to as the NGPPA (A) cable [4] and NGPPB (A) cable [3])

(2) An installation of the position cables for the nose gear steering

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

(3) A removal of the steering system cables for the nose gear (referred to as the NWS-A (A) cable [14], NWS-A (B) cable [25], NWS-A (C) cable [8], NWS-B cable [7], and NWS-A/B cable [9])

LOM 443, 444, 464-999

(4) A removal of the steering system cables for the nose gear (referred to as the NWS-A (A) cable [14], NWS-A (C) cable [14A], NWS-A (B) cable [25], NWS-A (D) cable [8], NWS-B (B) cable [8A], NWS-B cable [7], NWS-B (A) cable [7A], and NWS-A/B cable [9]

LOM ALL

(5) An installation of the steering system cables for the nose gear.

B. The position cables have four segments. This procedure can be used to replace two of the segments attached to the rotary actuator pulley. You must use the Maintenance Manual to replace the two segments attached to the drum on the rudder pedal steering mechanism (PAGEBLOCK 32-51-21/401).

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

C. The steering system cables have five segments. This procedure can be used to replace all of the segments. The steering cables (referred to as the NWS-A (A) cable [14] and NWS-B cable [7]) are attached to the drum that is part of the control wheel assembly. You must remove the control wheel and drum to replace the steering cables.

LOM 443, 444, 464-999

D. The steering system cables have eight segments. This procedure can be used to replace all of the segments. The steering cables (referred to as the NWS-A (A) cable [14], NWS-A (C) cable [14A], NWS-B cable [7], and NWS-B (A) cable [7A] are attached to the drum that is part of the control wheel assembly. You must remove the control wheel and the drum to replace the steering cables.

LOM ALL

TASK 32-51-31-000-801

2. Nose Gear Steering Position Cables Removal

(Figure 401 or Figure 402)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

D. Prepare for the Removal

SUBTASK 32-51-31-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-31-860-001

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-31-580-001

(3) Lift the nose of the airplane with jacks until the nose gear tires are clear of the ground, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-31-010-001

(4) Remove the forward access panel from the left sidewall of the nose wheel well to get access to the turnbuckles [2] of the NGPPA (A) cable [4] and NGPPB (A) cable [3] (TASK 53-14-01-020-801).

(a) Open this access panel:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

SUBTASK 32-51-31-480-002

(5) Install the rig pin NS5 in the drum on the interconnect mechanism.

E. Nose Gear Steering Position Cables Removal

SUBTASK 32-51-31-010-002

(1) Remove the NGPPB (A) cable [3] and NGPPA (A) cable [4], do these steps:

(a) Remove the clips [1] from the turnbuckles [2].

(b) Disconnect the NGPPA (A) cable [4] and NGPPB (A) cable [3] at the turnbuckles [2].

(c) Remove the pins [5] to disconnect the NGPPA (A) cable [4] and NGPPB (A) cable [3] from the rotary actuator pulley.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G16146 S0006575769_V3

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 1 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 **CAUTION:**

MAKE SURE THE ENDS OF THE PINS [5] DO NOT TOUCH THE HOUSING OF THE ROTARY ACTUATOR AFTER INSTALLATION. IF THE PINS TOUCH THE HOUSING, DAMAGE TO EQUIPMENT CAN OCCUR.

G16119 S0006575771_V4

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 2 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G16141 S0006575772_V3

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 3 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D

FLIGHT COMPARTMENT

E

G16164 S0006575773_V5

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 4 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G16178 S0006575775_V3

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 5 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G16196 S0006575777_V3

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 6 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STEERING CABLE PULLEYS
(NOSE WHEEL WELL ACCESS PANEL REMOVED)

I

STEERING CABLE PULLEYS

J

G17549 S0006575779_V4

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 7 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G17001 S0006575781_V3

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 8 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(VIEW IN THE FORWARD DIRECTION)

N

G16260 S0006575782_V3

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 9 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 10 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE GUARD CLEARANCE
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)
B-B

3067510 S0000828797_V1

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 11 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE GUARD CLEARANCE
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)
B-B

3067760 S0000829390_V1

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 12 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE REFERENCE	FUNCTION	NUMBER REQUIRED	LENGTH INCHES 1	FITTINGS 1	
				1	2
A 5	NWSA (A)	1	L1 52.3 (1.328 m)	MS21260L3LH	BACT14A3
B 5	NWSA (B)	1	L1 16.8 (426.7 mm)	MS21260L3RH	BACT14A3
C 5	NGPPB (A)	1	L1 11.6 (294.6 mm)	MS21260S3LH	BACT14A3
D 5	NGPPA (A)	1	L1 11.2 (284.5 mm)	MS21260S3RH	BACT14A3
E 5	NWSA (C)	1	L1 68.0 (1.727 m)	MS21260L3RH	BACT14A3
F 5	NWSB	1	L1 127.2 (3.231 m)	MS21260L3LH	BACT14A3
G 4	NWSA/B	1	L1 190.2 (4.831 m)	MS21260L3RH/LH	BACT14B3
H 6	NGPPB (B)	1	L1 11.0 (279.4 mm)	MS21260S3RH	BACT14B3
I 6	NGPPA (B)	1	L1 9.7 (246.4 mm)	MS21260S3LH	BACT14B3

1 REFERENCE ONLY. REFER TO CURRENT IPC FOR SPECIFIC PART NUMBER, LENGTH, MATERIAL AND END FITTING ASSEMBLY FABRICATION TENSIONING LOADS, AND TOLERANCES.

2 THIS END TAKES A RIGHT HAND THREADED FITTING.

3 THIS END TAKES A LEFT HAND THREADED FITTING.

4 CABLE MATERIAL: 3/32 CRES 7X7 PER MIL-W-83420, TYPE IB, NO FINISH.

5 CABLE MATERIAL: 3/32 TIN OVER ZINC CARBON STEEL, 7X7 PER BMS 7-265, TYPE 1, COMPOSITION A.

6 CABLE MATERIAL: 3/32 ZINC PLATED CARBON STEEL, 7X7 PER MIL-DTL-83420, TYPE 1, COMPOSITION A.

G17009 S0006575785_V7

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 13 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE REFERENCE	FUNCTION	NUMBER REQUIRED	LENGTH INCHES 1	FITTINGS 1	
				1	2
A 5	NWSA (A)	1	L1 52.3 (1.328 m)	MS21260L3LH	BACT14A3
B 5	NWSA (B)	1	L1 16.8 (426.7 mm)	MS21260L3RH	BACT14A3
C 5	NGPPB (A)	1	L1 11.6 (294.6 mm)	MS21260S3LH	BACT14A3
D 5	NGPPA (A)	1	L1 11.2 (284.5 mm)	MS21260S3RH	BACT14A3
E 5	NWSA (C)	1	L1 68.0 (1.727 m)	MS21260L3RH	BACT14A3
F 5	NWSB	1	L1 127.2 (3.231 m)	MS21260L3LH	BACT14A3
G 4	NWSA/B	1	L1 190.2 (4.831 m)	MS21260L3RH/LH	BACT14B3
H 6	NGPPB (B)	1	L1 11.0 (279.4 mm)	MS21260S3RH	BACT14B3
I 6	NGPPA (B)	1	L1 9.7 (246.4 mm)	MS21260S3LH	BACT14B3

1 REFERENCE ONLY. REFER TO CURRENT IPC FOR SPECIFIC PART NUMBER, LENGTH, MATERIAL AND END FITTING ASSEMBLY FABRICATION TENSIONING LOADS, AND TOLERANCES.

2 THIS END TAKES A RIGHT HAND THREADED FITTING.

3 THIS END TAKES A LEFT HAND THREADED FITTING.

4 CABLE MATERIAL: 3/32 CRES 7X7 PER MIL-W-83420, TYPE IB, NO FINISH, OR CRES 7X7 PER BMS7-265, TYPE I, COMPOSITION B.

5 CABLE MATERIAL: 3/32 TIN OVER ZINC CARBON STEEL, 7X7 PER BMS 7-265, TYPE 1, COMPOSITION A.

6 CABLE MATERIAL: 3/32 ZINC PLATED CARBON STEEL, 7X7 PER MIL-DTL-83420, TYPE 1, COMPOSITION A.

3060508 S0000823721_V1

Steering System Cables Installation
Figure 401/32-51-31-990-801 (Sheet 14 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 1 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 **CAUTION:**

MAKE SURE THE ENDS OF THE PINS [5] DO NOT TOUCH THE HOUSING OF THE ROTARY ACTUATOR AFTER INSTALLATION. IF THE PINS TOUCH THE HOUSING, DAMAGE TO EQUIPMENT CAN OCCUR.

G16119 S0006575771_V4

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 2 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G16141 S0006575772_V3

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 3 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D

FLIGHT COMPARTMENT

E

K63601 S0006575774_V5

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 4 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 5 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K63885 S0006575778_V3

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 6 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STEERING CABLE PULLEYS
(NOSE WHEEL WELL ACCESS PANEL REMOVED)

I

STEERING CABLE PULLEYS

J

K64109 S0006575780_V4

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 7 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 8 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(VIEW IN THE FORWARD DIRECTION)

N

G16260 S0006575782_V3

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 9 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 10 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE GUARD CLEARANCE
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)
B-B

3067510 S0000828797_V1

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 11 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE GUARD CLEARANCE
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)
B-B

3067760 S0000829390_V1

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 12 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE REFERENCE	FUNCTION	NUMBER REQUIRED	LENGTH INCHES 1		FITTINGS 1	
					1	2
A 5	NWSA (A)	1	L1	52.3	MS21260L3LH	BACT14A3
B 5	NWSA (B)	1	L1	16.8	MS21260L3RH	BACT14A3
C 5	NGPPB (A)	1	L1	11.6	MS21260S3LH	BACT14A3
D 5	NGPPA (A)	1	L1	11.2	MS21260S3RH	BACT14A3
E 5	NWSB (B)	1	L1	97.7	MS21260L3RH	BACT14A3
F 5	NWSB	1	L1	127.2	MS21260L3LH	BACT14A3
G 4	NWSA/B	1	L1	190.2	MS21260L3RH/LH	BACT14B3
A 5	NWSB (A)	1	L1	62.6	MS21260L3LH	BACT14A3
-	NWSA (C)	1	65.68 (REF)		-	-
F 5	NWSA (D)	1	L1	111.5	MS21260L3LH	BACT14A3
H 6	NGPPB (B)	1	L1	11.0	MS21260S3RH	BACT14B3
I 6	NGPPA (B)	1	L1	9.7	MS21260S3LH	BACT14B3

1 REFERENCE ONLY. REFER TO CURRENT IPC FOR SPECIFIC PART NUMBER, LENGTH, MATERIAL AND END FITTING ASSEMBLY FABRICATION TENSIONING LOADS, AND TOLERANCES.

2 THIS END TAKES A RIGHT HAND THREADED FITTING.

3 THIS END TAKES A LEFT HAND THREADED FITTING.

4 CABLE MATERIAL: 3/32 CRES 7X7 PER MIL-W-83420, TYPE IB, NO FINISH.

5 CABLE MATERIAL: 3/32 TIN OVER ZINC CARBON STEEL, 7X7 PER BMS 7-265, TYPE 1, COMPOSITION A.

6 CABLE MATERIAL: 3/32 ZINC PLATED CARBON STEEL, 7X7 PER MIL-DTL-83420, TYPE 1, COMPOSITION A.

K63801 S0006575786_V5

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 13 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE REFERENCE	FUNCTION	NUMBER REQUIRED	LENGTH INCHES 1		FITTINGS 1	
					1	2
A 5	NWSA (A)	1	L1	52.3	MS21260L3LH	BACT14A3
B 5	NWSA (B)	1	L1	16.8	MS21260L3RH	BACT14A3
C 5	NGPPB (A)	1	L1	11.6	MS21260S3LH	BACT14A3
D 5	NGPPA (A)	1	L1	11.2	MS21260S3RH	BACT14A3
E 5	NWSB (B)	1	L1	97.7	MS21260L3RH	BACT14A3
F 5	NWSB	1	L1	127.2	MS21260L3LH	BACT14A3
G 4	NWSA/B	1	L1	190.2	MS21260L3RH/LH	BACT14B3
A 5	NWSB (A)	1	L1	62.6	MS21260L3LH	BACT14A3
-	NWSA (C)	1	65.68 (REF)		-	-
F 5	NWSA (D)	1	L1	111.5	MS21260L3LH	BACT14A3
H 6	NGPPB (B)	1	L1	11.0	MS21260S3RH	BACT14B3
I 6	NGPPA (B)	1	L1	9.7	MS21260S3LH	BACT14B3

1 REFERENCE ONLY. REFER TO CURRENT IPC FOR SPECIFIC PART NUMBER, LENGTH, MATERIAL AND END FITTING ASSEMBLY FABRICATION TENSIONING LOADS, AND TOLERANCES.

2 THIS END TAKES A RIGHT HAND THREADED FITTING.

3 THIS END TAKES A LEFT HAND THREADED FITTING.

4 CABLE MATERIAL: 3/32 CRES 7X7 PER MIL-W-83420, TYPE IB, NO FINISH, OR CRES 7X7 PER BMS7-265, TYPE I, COMPOSITION B.

5 CABLE MATERIAL: 3/32 TIN OVER ZINC CARBON STEEL, 7X7 PER BMS 7-265, TYPE 1, COMPOSITION A.

6 CABLE MATERIAL: 3/32 ZINC PLATED CARBON STEEL, 7X7 PER MIL-DTL-83420, TYPE 1, COMPOSITION A.

3060509 S0000823722_V1

Steering System Cables Installation
Figure 402/32-51-31-990-803 (Sheet 14 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-31-400-801

3. Nose Gear Steering Position Cables Installation

(Figure 401 or Figure 402)

A. References

Reference	Title
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
20-10-91-400-801	Control Cables Installation (P/B 401)
32-51-00-820-801	Rudder Pedal Interconnect Mechanism Adjustment (P/B 501)
32-51-00-820-804	Rudder Pedal Interconnect Mechanism Adjustment Check (P/B 501)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
C00308	Compound - Corrosion Preventive, Petrolatum Hot Application	MIL-C-11796
C00528	Compound - Corrosion Preventive, Petroleum Hot Application (Soft Film)	MIL-C-11796 Class III

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	NGPPB (A) cable	32-51-31-10-015	LOM 443, 444, 464-999
		32-51-31-15-015	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463
4	NGPPA (A) cable	32-51-31-10-010	LOM 443, 444, 464-999
		32-51-31-15-010	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463
5	Pin	32-51-31-10-005	LOM 443, 444, 464-999
		32-51-31-15-005	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Access Panels

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

F. Nose Gear Steering Position Cables Installation

SUBTASK 32-51-31-420-001

(1) Install the NGPPB (A) cable [3] and NGPPA (A) cable [4], do this task: Control Cables Installation, TASK 20-10-91-400-801.

NOTE: The cable length and fittings are shown in Figure 401 or Figure 402.

(a) Apply a thin layer of corrosion preventive compound, C00308, or compound, C00528, to the threads on the internal and external surfaces of the mating adjustable parts on the turnbuckles [2].

SUBTASK 32-51-31-420-002

(2) Connect the NGPPA (A) cable [4] and NGPPB (A) cable [3] to the rotary actuator pulley.

> **CAUTION** DO NOT LET THE ENDS OF THE PINS TOUCH THE HOUSING OF THE ACTUATOR WHEN THE CABLES ARE INSTALLED. DAMAGE TO THE ROTARY ACTUATOR CAN OCCUR.

(a) Install the pins [5] in the rotary actuator pulley.

SUBTASK 32-51-31-420-003

(3) Connect the NGPPA (A) cable [4] and NGPPB (A) cable [3] at the turnbuckles [2].

SUBTASK 32-51-31-820-001

(4) Adjust the NGPPA (A) cable [4] and NGPPB (A) cable [3], do this task: Rudder Pedal Interconnect Mechanism Adjustment Check, TASK 32-51-00-820-804.

SUBTASK 32-51-31-820-002

(5) Do the adjustment for the rudder pedal interconnect mechanism, do this task: Rudder Pedal Interconnect Mechanism Adjustment, TASK 32-51-00-820-801.

SUBTASK 32-51-31-420-004

(6) Install the locking clips [1] on the turnbuckles [2].

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-31-580-002

(1) Lower the nose of the airplane and remove the jacks, do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-51-31-410-001

(2) Install the forward access panel on the left sidewall of the nose wheel well (TASK 53-14-01-420-801).

(a) Close this access panel:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

SUBTASK 32-51-31-080-001

(3) Remove the rig pin NS5 from the drum on the interconnect mechanism.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-31-000-802

4. Nose Gear Steering System Cables Removal

(Figure 401 or Figure 402)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
20-10-96-000-801	Control Cable End Retaining Plate - Removal (P/B 401)
25-21-46-000-801	Sidewall Panel - Removal (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1821	Adjustable Spanner Wrench (0.75 to 2.00 Inch Dia. Retainer, 0.12 x 0.12 Key Arm) Part #: F72959-40 Supplier: 81205 Opt Part #: F72959-4 Supplier: 81205

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Access Panels

Number	Name/Location
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

E. Prepare for the Removal

SUBTASK 32-51-31-480-003

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-31-860-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-31-480-004

(3) Install the rig pin NS2 in the drum for the captain's control wheel.

LOM 443, 444, 464-999

SUBTASK 32-51-31-480-007

(4) Install the rig pin NS10 in the drum for the first officer's control wheel.

LOM ALL

SUBTASK 32-51-31-580-003

(5) If it is necessary, lift the airplane on jacks until the nose gear shock strut is fully extended and wheels do not touch the ground, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

NOTE: The nose of the airplane is lifted with jacks to find the center position of the nose landing gear and steering collar. This will help correctly install the cables for the nose gear steering system. The internal centering cam of the shock strut is used to find the center position of the nose landing gear and steering collar. If the jacks are not available you can use grease plates under the nose wheels to put the nose gear and steering collar in the center position.

NOTE: As an optional procedure, to put the nose landing gear and steering collar in the center position without jacks, tow the airplane a minimum of 12 ft (4 m) in a straight line before it is parked.

SUBTASK 32-51-31-010-003

(6) Remove the forward access panel from the left sidewall of the nose wheel well to get access to the turnbuckle [10] of the NWS-A (A) cable [14] and NWS-A (B) cable [25] (TASK 53-14-01-020-801).

(a) Open this access panel:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

LOM 443, 444, 464-999

SUBTASK 32-51-31-010-005

(7) Remove the forward access panel from the right sidewall of the nose wheel well to get access to the turnbuckles [10] of the NWS-A (C) cable [14A], NWS-B (A) cable [7A], NWS-A (D) cable [8], and NWS-B (B) cable [8A] (TASK 53-14-01-020-801).

(a) Open this access panel:

Number	Name/Location
114AW	Forward Nose Wheel Well Panel

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-31-010-004

(8) Remove the aft access panel from the left sidewall of the nose wheel well to get access to the turnbuckles [10] for the NWS-B cable [7], NWS-A (C) cable [8], and NWS-A/B cable [9] (TASK 53-14-01-020-801).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Open this access panel:

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

LOM 443, 444, 464-999

SUBTASK 32-51-31-010-006

(9) Remove the aft access panel from the left sidewall of the nose wheel well to get access to the turnbuckles [10] for the NWS-B cable [7], NWS-A (D) cable [8], and NWS-A/B cable [9] (TASK 53-14-01-020-801).

(a) Open this access panel:

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

LOM ALL

F. Nose Gear Steering System Cables Removal

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-31-020-002

(1) Remove the NWS-A (C) cable [8], NWS-A (A) cable [14], and NWS-A (B) cable [25].

(a) Remove the clips [6] from the turnbuckles [10].

(b) Disconnect the NWS-A (C) cable [8], NWS-A (A) cable [14], and NWS-A (B) cable [25] at the turnbuckles [10].

(c) Do these steps to disconnect the NWS-A (A) cable [14] from the drum [18]:

1) Remove the plug button [12] from the control wheel [11].

2) Remove the nut [13] that holds the control wheel [11] to the tiller assembly.

3) Remove the control wheel [11].

4) Remove the sidewall to get access to the drum [18] on the tiller assembly, do this task: Sidewall Panel - Removal, TASK 25-21-46-000-801.

5) Remove the nut [15] and washer [16] from the shaft [20].

6) Remove the shaft [20], washer [19], and spacers [17].

7) Remove the drum [18].

8) Remove the pin [56] from the drum [18].

(d) Remove the nut [28], washer [22], bolt [27], and pulley [26] from the bracket.

(e) Remove the NWS-A (A) cable [14].

(f) Remove the nuts [21], washers [57], end plates [23], and screws [24] that attach the NWS-A (B) cable [25] and NWS-A (C) cable [8], to the quadrant for the steering mechanism (TASK 20-10-96-000-801).

(g) Remove the NWS-A (B) cable [25].

(h) Remove the nut [28], washer [22], bolt [29], and pulley [26] from the bracket.

(i) Remove the NWS-A (C) cable [8].

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LOM 443, 444, 464-999

SUBTASK 32-51-31-020-005

(2) Remove the NWS-B (A) cable [7A], NWS-A (D) cable [8], NWS-B (B) cable [8A], NWS-A (A) cable [14], NWS-A (C) cable [14A], and NWS-A (B) cable [25].

(a) Remove the clips [6] from the turnbuckles [10].

(b) Disconnect the NWS-B (A) cable [7A], NWS-A (D) cable [8], NWS-B (B) cable [8A], NWS-A (A) cable [14], NWS-A (C) cable [14A], and NWS-A (B) cable [25] at the turnbuckles [10].

(c) Do these steps to disconnect the NWS-A (A) cable [14], NWS-A (C) cable [14A], and NWS-B (A) cable [7A] from the drum [18]:

1) Remove the plug button [12] from the control wheel [11].

2) Remove the nut [13] that holds the control wheel [11] to the tiller assembly.

3) Remove the control wheel [11].

4) Remove the sidewall to get access to the drum [18] on the tiller assembly, do this task: Sidewall Panel - Removal, TASK 25-21-46-000-801.

5) Remove the nut [15] and washer [16] from the shaft [20].

6) Remove the shaft [20], washer [19], and spacers [17].

7) Remove the drum [18].

8) Remove the pin [56] from the drum [18].

(d) Remove the nut [28], washer [22], bolt [27], and pulley [26] from the bracket.

(e) Remove the NWS-A (A) cable [14], NWS-A (C) cable [14A], and NWS-B (A) cable [7A].

(f) Remove the nuts [21], washers [57], end plates [23], and screws [24] that attach the NWS-A (B) cable [25] and NWS-B (B) cable [8A] to the quadrant for the steering mechanism.

(g) Remove the NWS-A (B) cable [25].

(h) Remove the nut [28], washer [22], bolt [29], and pulley [26] from the bracket.

(i) Remove the NWS-A (D) cable [8] and NWS-B (B) cable [8A].

LOM ALL

SUBTASK 32-51-31-020-003

(3) Remove the NWS-B cable [7].

(a) Remove the clips [6] from the turnbuckles [10].

(b) Disconnect the NWS-B cable [7] and NWS-A/B cable [9] at the turnbuckle [10].

(c) Do these steps to disconnect the NWS-B cable [7] at the drum [18]:

1) Remove the plug button [12] from the control wheel [11].

2) Remove the nut [13] that holds the control wheel [11] to the tiller assembly.

3) Remove the control wheel [11].

4) Remove the sidewall to get access to the drum [18], do this task: Sidewall Panel - Removal, TASK 25-21-46-000-801.

5) Remove the nut [15] and washer [16] from the shaft [20].

6) Remove the shaft [20], washer [19], and spacers [17].

7) Remove the drum [18].

8) Remove the pin [56] from the drum [18].

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(d) Remove the nut [28], washer [22], bolt [27], and pulley [26] from the bracket.

(e) Remove the nut [28], washer [22], bolt [30], and pulley [26] from the bracket.

(f) Remove the NWS-B cable [7].

SUBTASK 32-51-31-020-004

(4) Remove the NWS-A/B cable [9].

(a) Remove the screws [44], washers [45], and cover for the summing mechanism cover [46].

(b) Remove the pins [50] from the steering collar.

(c) Remove the nuts [52], washers [45], and screws [54] to remove the cable guards [53].

(d) Remove the nuts [34], washers [55], washers [33], bolts [32], cable guards [31], and pulleys [26] from their brackets.

(e) Remove the bolts [51], washers [33], and pulleys [26] from the bracket behind the trunnion.

(f) Remove the nuts [28], bolts [47], washers [48], bushings [49], and pulleys [26] from the pulley brackets on the summing mechanism.

(g) Remove the seal [38] from the left trunnion of the nose gear.

1) Remove the lockwire from the screw [35] and lock [43].

2) Remove the screw [35] that holds the lock [43] to the left trunnion pin.

3) Remove the lock [43] from the left trunnion pin.

4) Use the spanner wrench, SPL-1821, to remove the trunnion pin nut [40] from the left trunnion pin.

5) Pull the seal ring [41] and seal [38] from the left trunnion pin.

a) If it is difficult to pull the seal [38], hold the eyebolt [39] and pull the seal [38] out of the left trunnion pin.

6) Remove the nut [36], washer [42], and inboard retainer [37] from the eyebolt [39].

7) Remove the eyebolt [39] from the left trunnion pin.

8) Remove the outboard retainer [37] from the eyebolt [39].

9) Separate the segments of the seal [38] from the NWS-A/B cable [9].

10) Pull the NWS-A/B cable [9] through the trunnion pin nut [40], seal ring [41], and left trunnion pin.

(h) Remove the NWS-A/B cable [9].

END OF TASK

TASK 32-51-31-400-802

5. Nose Gear Steering System Cables Installation

(Figure 401 or Figure 402)

A. References

Reference	Title
20-10-91-400-801	Control Cables Installation (P/B 401)
20-10-96-400-801	Control Cable End Retaining Plate - Installation (P/B 401)
20-20-31-200-801	Control Cable Wire Rope - Inspection (P/B 601)
25-21-46-400-801	Sidewall Panel - Installation (P/B 401)

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(Continued)

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-51-00-820-802	Nose Wheel Steering System Adjustment (P/B 501)
32-51-00-820-804	Rudder Pedal Interconnect Mechanism Adjustment Check (P/B 501)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1821	Adjustable Spanner Wrench (0.75 to 2.00 Inch Dia. Retainer, 0.12 x 0.12 Key Arm) Part #: F72959-40 Supplier: 81205 Opt Part #: F72959-4 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
C00308	Compound - Corrosion Preventive, Petrolatum Hot Application	MIL-C-11796
C00528	Compound - Corrosion Preventive, Petroleum Hot Application (Soft Film)	MIL-C-11796 Class III
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7A	NWS-B (A) cable	32-51-31-10-050	LOM 443, 444, 464-999
8	NWS-A (D) cable	32-51-31-10-045	LOM 443, 444, 464-999
8	NWS-A (C) cable	32-51-31-15-045	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463
8A	NWS-B (B) cable	32-51-31-10-045	LOM 443, 444, 464-999
9	NWS-A/B cable	32-51-52-03-005	LOM ALL
14	NWS-A (A) cable	32-51-31-12-010	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463
14A	NWS-A (C) cable	32-51-31-10-045	LOM 443, 444, 464-999
25	NWS-A (B) cable	32-51-31-15-040	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

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(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
50	Pin	32-51-52-03-075	LOM ALL
56	Pin	32-51-41-03-045	LOM ALL
		32-51-41-04-045	LOM 443, 444, 464-999

E. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

F. Access Panels

Number	Name/Location
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

G. Prepare for the Installation

SUBTASK 32-51-31-480-005

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-31-860-003

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-31-480-006

(3) Make sure that the rig pin NS2 is in the drum for the captain's control wheel.

LOM 443, 444, 464-999

SUBTASK 32-51-31-480-008

(4) Make sure that the rig pin NS10 is in the drum for the first officer's control wheel.

LOM ALL

H. Nose Gear Steering System Cables Installation

CAUTION MAKE SURE THAT THE STEERING CABLES ARE IN THE GROOVES OF THE PULLEYS WHEN YOU ASSEMBLE THEM. CABLES THAT ARE NOT IN THE CABLE GUARDS CAN CAUSE DAMAGE.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(CAUTION PRECEDES)

CAUTION	DO NOT APPLY SOLVENTS, GREASE, OR OIL TO STAINLESS STEEL CONTROL CABLES. THESE MATERIALS CAN COLLECT CONTAMINATION THAT CAN CAUSE DAMAGE TO THE INTERNAL SURFACES OF THE CRES CABLE STRANDS. THIS CAN DECREASE THE SERVICE LIFE OF THE CABLE.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-31-420-005

(1) Install the NWS-A (C) cable [8], NWS-A (A) cable [14], and NWS-A (B) cable [25] (TASK 20-10-91-400-801).

NOTE: The cable length and fittings are shown in Figure 401.

(a) Apply a thin layer of corrosion preventive compound, C00308, or compound, C00528, to the threads on the internal and external surfaces of the mating adjustable parts on the turnbuckles [10].

(b) Do these steps to install the NWS-A (A) cable [14] on the drum [18]:

1) Put the end of the NWS-A (A) cable [14] in the groove on the drum [18].

2) Install the new pin [56] in the drum [18].

3) Install the drum [18] on the steering tiller assembly.

4) Install the shaft [20], washer [19], and spacers [17].

a) Install the shaft [20] with the missing tooth aligned in the drum [18].

5) Install the nut [15] and washer [16] on the shaft [20].

6) Install the control wheel [11].

7) Install the nut [13] that holds the control wheel [11] to the tiller assembly.

8) Tighten the nut [13] to 100 in-lb (11.3 N·m) - 150 in-lb (16.9 N·m) above the running torque.

9) Install the plug button [12] on the control wheel [11].

10) Install the sidewall you removed to get access to the drum [18] on the tiller assembly, do this task: Sidewall Panel - Installation, TASK 25-21-46-400-801.

(c) Connect the NWS-A (A) cable [14] to the pulley [26].

(d) Install the bolt [27], washer [22], nut [28], and pulley [26] on the bracket.

(e) Install the NWS-A (B) cable [25].

(f) Connect the NWS-A (C) cable [8] and NWS-A (B) cable [25] to the quadrant for the steering mechanism.

1) Install the end plates [23], screws [24], washers [57], and nuts [21] (TASK 20-10-96-400-801).

(g) Install the NWS-A (C) cable [8] in the groove of the pulley [26].

(h) Install the bolt [29], washer [22], nut [28], and pulley [26], on the bracket.

(i) Connect the NWS-A (A) cable [14] and the NWS-A (B) cable [25] at the turnbuckles [10].

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SUBTASK 32-51-31-420-009

(2) Install the NWS-B (A) cable [7A], NWS-A (D) cable [8], NWS-B (B) cable [8A], NWS-A (A) cable [14], NWS-A (C) cable [14A], and NWS-A (B) cable [25] (TASK 20-10-91-400-801).

NOTE: The cable length and fittings are shown in Figure 402.

(a) Apply a thin layer of corrosion preventive compound, C00308, or compound, C00528, to the threads on the internal and external surfaces of the mating adjustable parts on the turnbuckles [10].

(b) Do these steps to install the NWS-B (A) cable [7A], NWS-A (A) cable [14], and NWS-A (C) cable [14A] on the drum [18]:

1) Put the end of the NWS-A (A) cable [14] in the groove on the drum [18].

2) Put the end of the NWS-B (A) cable [7A] and NWS-A (C) cable [14A] in the groove on the drum [18].

3) Install the new pin [56] in the drum [18].

4) Install the drum [18] on the steering tiller assembly.

5) Install the shaft [20], washer [19], and spacers [17].

a) Install the shaft [20] with the missing tooth aligned in the drum [18].

6) Install the nut [15] and washer [16] on the shaft [20].

7) Install the control wheel [11].

8) Install the nut [13] that holds the control wheel [11] to the tiller assembly.

9) Tighten the nut [13] to 100 in-lb (11.3 N·m) - 150 in-lb (16.9 N·m) above the running torque.

10) Install the plug button [12] on the control wheel [11].

11) Install the sidewall you removed to get access to the drum [18] on the tiller assembly, do this task: Sidewall Panel - Installation, TASK 25-21-46-400-801.

(c) Connect the NWS-A (A) cable [14], NWS-B (A) cable [7A], and NWS-A (C) cable [14A] to the pulley [26].

(d) Install the bolt [27], washer [22], nut [28], and pulley [26] on the bracket.

(e) Install the NWS-A (B) cable [25].

(f) Connect the NWS-B (B) cable [8A] and NWS-A (B) cable [25] to the quadrant for the steering mechanism.

1) Install the end plates [23], screws [24], washers [57], and nuts [21].

(g) Install the NWS-A (D) cable [8] in the groove of the pulley [26].

(h) Install the bolt [29], washer [22], nut [28], and pulley [26], on the bracket.

(i) Connect the NWS-A (A) cable [14] and NWS-A (B) cable [25] at the turnbuckles [10].

(j) Connect the NWS-B (A) cable [7A] and NWS-B (B) cable [8A] at the turnbuckles [10].

(k) Connect the NWS-A (C) cable [14A] and NWS-A (D) cable [8] at the turnbuckles [10].

LOM ALL

SUBTASK 32-51-31-420-006

(3) Install the NWS-B cable [7] (TASK 20-10-91-400-801).

NOTE: The cable length and fittings are shown in Figure 401 or Figure 402.

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(a) Apply a thin layer of corrosion preventive compound, C00308, or compound, C00528, to the threads on the internal and external surfaces of the mating adjustable parts on the turnbuckles [10].

(b) Do these steps to install the NWS-B cable [7] on the drum [18]:

1) Put the end of the NWS-B cable [7] in the groove on the drum [18].

2) Install the new pin [56] in the drum [18].

3) Install the drum [18] in the steering tiller assembly.

4) Install the shaft [20], washer [19], and spacers [17].

a) Install the shaft [20] with the missing tooth aligned in the drum [18].

5) Install the nut [15] and washer [16] on the shaft [20].

6) Install the control wheel [11].

7) Install the nut [13] that holds the control wheel [11] to the tiller assembly.

8) Tighten the nut [13] to 100 in-lb (11.3 N·m) - 150 in-lb (16.9 N·m) above the running torque.

9) Install the plug button [12] on the control wheel [11].

10) Install the sidewall you removed to get access to the drum [18] on the tiller assembly, do this task: Sidewall Panel - Installation, TASK 25-21-46-400-801.

(c) Put the NWS-B cable [7] in the groove of the pulleys [26].

(d) Install the bolt [27], washer [22], nut [28], and pulley [26] on the bracket.

(e) Install the bolt [30], washer [22], nut [28], and pulley [26] on the bracket.

SUBTASK 32-51-31-420-007

(4) Install the NWS-A/B cable [9] (TASK 20-10-91-400-801).

NOTE: The cable length and fittings are shown in Figure 401 or Figure 402.

(a) Apply a thin layer of corrosion preventive compound, C00308, or compound, C00528, to the threads on the internal and external surfaces of the mating adjustable parts on the turnbuckles [10].

(b) Install the seal [38] and NWS-A/B cable [9] through the left trunnion of the nose gear:

1) Install the NWS-A/B cable [9] through the trunnion pin nut [40], seal ring [41], cable guard, left trunnion pin, pulleys [26] outside the left trunnion, pulley brackets on the summing mechanism, and around the steering collar.

a) Make sure that the NWS-A/B cables [9] are routed separately through the cable guard (Figure 401 or Figure 402).

b) Make sure that there is no riding condition between the NWS-A/B cables [9] and the cable guard (Figure 401 or Figure 402).

c) Make sure that the ends of the cable are not more than 1 in. (25.4 mm) apart when they are pulled tight where they come out of the left trunnion pin.

2) Install the segments of the seal [38] on the NWS-A/B cable [9].

3) Install the outboard retainer [37] on the eyebolt [39].

4) Install the inboard retainer [37], the washer [42], and nut [36], on the eyebolt [39].

a) Make sure that one cable goes over the trunnion pin bolt and one goes under the trunnion pin bolt where the cables go through the left trunnion.

5) Tighten the nut [36] sufficiently to clamp the seal [38].

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6) Loosen the nut [36] to approximately 1/4 turn until you can turn the eyebolt [39] with your fingers.

7) Put the seal [38] into the left trunnion pin until it touches the stop.

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

8) Apply Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (optional), to the threads of the trunnion pin nut [40], seal ring [41], and seal [38].

9) Put the seal ring [41] and seal [38] into the left trunnion pin.

10) Use the spanner wrench, SPL-1821, to install the trunnion pin nut [40] on the left trunnion pin.

11) Tighten the trunnion pin nut [40] to 100 in-lb (11.3 N·m) - 150 in-lb (16.9 N·m) then loosen the nut to align the slots on the nut with the bolt holes.

12) Install the lock [43] on the left trunnion pin.

13) Install the screw [35] to hold the lock [43] on the left trunnion pin.

14) Install the lockwire on the screw [35] and lock [43].

(c) Install the new pin [50] on the steering collar.

(d) For the pulleys on the top of the outer cylinder, do these steps:

1) Put the NWS-A/B cable [9] in the groove on the pulleys [26].

2) Install the pulleys [26], cable guards [31], bolts [32], washers [55], washers [33], and nuts [34] on their brackets on the top of the outer cylinder.

(e) For the pulleys on the bracket behind the trunnion, do these steps:

1) Put the NWS-A/B cable [9] in the groove on the pulleys [26].

2) Install the pulleys [26], bolts [51], and washers [33] on the bracket behind the trunnion.

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

a) Install the bolt [51] with Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (optional).

b) Tighten the bolt [51] to 73 in-lb (8 N·m) - 77 in-lb (9 N·m).

(f) For the pulleys on the summing mechanism, do these steps:

1) Put the NWS-A/B cable [9] in the groove on the pulleys [26].

2) Install the nuts [28], bolts [47], washers [48], bushings [49], and pulleys [26] on the pulley brackets on the summing mechanism.

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a) Tighten the nuts [28] to 50 in-lb (5.6 N·m) - 75 in-lb (8.5 N·m) above the run-on torque.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

(g) Install the nuts [52], washers [45], and screws [54] to attach the cable guards [53] to the upper plate.

1) Make sure that the clearance between the cable guard [53] and steering collar is 0.0320 +0.0450 / -0.0150 in. (0.8128 +1.1430 / -0.3810 mm) (View B-B, Figure 401 or Figure 402).

2) Tighten the nuts [52] to 20 in-lb (2.3 N·m) - 25 in-lb (2.8 N·m).

LOM 462-999

(h) Install the nuts [52], washers [45], and screws [54] to attach the cable guards [53] to the upper plate.

1) Make sure that the clearance between the cable guard [53] and steering collar is 0.0150 in. (0.3810 mm) - 0.0450 in. (1.1430 mm) (View B-B, Figure 401 or Figure 402).

2) Tighten the nuts [52] to 20 in-lb (2.3 N·m) - 25 in-lb (2.8 N·m).

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

(i) Connect the NWS-A (C) cable [8], NWS-B cable [7], and NWS-A/B cable [9] at the turnbuckles [10].

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(j) Connect the NWS-A (D) cable [8], NWS-B cable [7], and NWS-A/B cable [9] at the turnbuckles [10].

LOM ALL

SUBTASK 32-51-31-200-001

(5) Do this task: Control Cable Wire Rope - Inspection, TASK 20-20-31-200-801.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-31-210-005

(1) Visually examine the steering cables to make sure that the cables are routed correctly around the pulleys and are not outside the cable guards.

SUBTASK 32-51-31-820-003

(2) Do the adjustment for the rudder pedal interconnect mechanism, do this task: Rudder Pedal Interconnect Mechanism Adjustment Check, TASK 32-51-00-820-804.

SUBTASK 32-51-31-820-004

(3) Do the adjustment for the nose wheel steering system, do this task: Nose Wheel Steering System Adjustment, TASK 32-51-00-820-802.

SUBTASK 32-51-31-420-008

(4) Install the clips [6] on the turnbuckles [10].

SUBTASK 32-51-31-410-004

(5) Install the cover for the summing mechanism cover [46].

(a) Install the screws [44] and washers [45].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

SUBTASK 32-51-31-410-006

(6) Install the forward access panels on the left and right sidewalls of the nose wheel (TASK 53-14-01-420-801).

(a) Close these access panels:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel

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SUBTASK 32-51-31-410-007

(7) Install the forward access panels on the left and right sidewalls of the nose wheel (TASK 53-14-01-420-801).

Close these access panels:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel
113BW	Forward Nose Wheel Well Panel
114AW	Forward Nose Wheel Well Panel

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STEERING SYSTEM CABLES - INSPECTION/CHECK

1. General

A. This procedure only has a wear limits table which shows the data for wear limits. There are no procedures for access, removal, or installation of the cables. Refer to the Steering System Cables - Removal/Installation for procedures to do these tasks.

TASK 32-51-31-220-801

2. Inspect Nose Gear Steering Cables

A. References

Reference	Title
12-26-00-600-801	Control Cable Lubrication (P/B 301)
20-20-31-200-801	Control Cable Wire Rope - Inspection (P/B 601)
20-20-31-200-802	Inspection of the Control Cable Fittings (P/B 601)
20-20-31-200-805	Inspection of Pulleys (P/B 601)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-51-11-400-801	Steering Metering Valve Installation (Without Using Cable Clamp Assembly) (P/B 401)
32-51-11-990-801	Figure: Steering Metering Valve Installation (P/B 401)
32-51-31-000-802	Nose Gear Steering System Cables Removal (P/B 401)
32-51-31-990-801	Figure: Steering System Cables Installation (P/B 401)
32-51-31-990-803	Figure: Steering System Cables Installation (P/B 401)
32-51-52-020-801	Summing Mechanism Removal (Without Using Cable Clamp Assembly) (P/B 401)
32-51-52-990-801	Figure: Nose Landing Gear Steering Summing Mechanism Installation (P/B 401)

B. Prepare for the inspection

SUBTASK 32-51-31-840-001

(1) Make sure the downlock pins are installed for the Nose and Main Landing Gear. If they are not, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-31-010-008

(2) Do the steps to remove the Nose Landing Gear Steering Summing Mechanism cover [46], as shown in (TASK 32-51-52-020-801), Figure 32-51-52-990-801.

C. Inspect the Steering Cables

SUBTASK 32-51-31-210-004

> **CAUTION**
> DO NOT APPLY SOLVENTS, GREASE, OR OIL TO STAINLESS STEEL CONTROL CABLES. THESE MATERIALS CAN COLLECT CONTAMINATION THAT CAN CAUSE DAMAGE TO THE INTERNAL SURFACES OF THE CRES CABLE STRANDS. THIS CAN DECREASE THE SERVICE LIFE OF THE CABLE.

(1) Examine the interior of the LH trunnion pin, the area around the pressure seal, the steering cable and cable guard for grease and dirt. If dirt or grease is found, do this task: Control Cable Lubrication, TASK 12-26-00-600-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-31-210-001

(2) Examine the steering cables for correct routing, broken wires, fraying and corrosion. To examine them, do this task: Control Cable Wire Rope - Inspection, TASK 20-20-31-200-801. Refer to (TASK 32-51-31-000-802), Figure 32-51-31-990-801 or Figure 32-51-31-990-803, to find where the cables run.

NOTE: In order to examine the part of the cables in the trunnion pin it will be necessary to turn the wheels fully in both directions.

SUBTASK 32-51-31-210-002

(3) Examine the control cable fittings and cable seals for these conditions; deterioration; out-of-round wear; mounting rings that are not secure. To examine them, do this task: Inspection of the Control Cable Fittings, TASK 20-20-31-200-802 Refer to (TASK 32-51-31-000-802), Figure 32-51-31-990-801 or Figure 32-51-31-990-803, to find where the cable fittings and seals are located. Remove all grease that you find on the pressure seals.

SUBTASK 32-51-31-210-003

(4) Examine the cable pulley brackets, pulleys and fairleads for these conditions; cracks; distortion; loose mounting, cracks or misalignment. To examine them, do this task: Inspection of Pulleys, TASK 20-20-31-200-805. Refer to (TASK 32-51-31-000-802), Figure 32-51-31-990-801 or Figure 32-51-31-990-803, to find where the cable brackets, pulleys and fairleads are located.

D. Restore the Airplane to its Usual Condition

SUBTASK 32-51-31-010-009

(1) Do the steps to install the Nose Landing Gear Steering Summing Mechanism Cover [46], as shown in (TASK 32-51-11-400-801), Figure 32-51-11-990-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR CONTROL WHEEL AND TILLER ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the control wheel for the steering system of the nose landing gear

(2) A removal of the tiller assembly for the steering system of the nose landing gear

(3) An installation of the tiller assembly for the steering system of the nose landing gear

(4) An installation of the control wheel for the steering system of the nose landing gear.

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(5) This procedure applies to the Captain's and the First Officers control wheel and tiller assembly.

LOM ALL

TASK 32-51-41-000-801

2. Nose Landing Gear Steering Control Wheel Removal

(Figure 401)

A. General

(1) This procedure provides instructions to remove the control wheel.

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
211	Flight Compartment - Left
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-51-41-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Nose Landing Gear Steering Control Wheel Removal

SUBTASK 32-51-41-020-001

(1) Remove the control wheel [7] from the tiller assembly [13]:

(a) Remove the plug button [1] from the control wheel [7].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the nut [2] and washer [19] that attach the control wheel [7] to the tiller assembly [13].

NOTE: Captain's tiller assembly P/N 275A2101-2 and 275A2101-3 contain more than one washer.

(c) Remove the control wheel [7] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

3073823 S0000832258_V1

Nose Landing Gear Steering Control Wheel Installation
Figure 401/32-51-41-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 CAPTAIN'S TILLER ASSEMBLY
P/N 275A2101-2 AND 275A2101-3
CONTAIN MORE THAN ONE WASHER

C

F73307 S0006575796_V5

Nose Landing Gear Steering Control Wheel Installation
Figure 401/32-51-41-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

3073825 S0000832259_V1

Nose Landing Gear Steering Control Wheel Installation
Figure 401/32-51-41-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S CONTROL WHEIL
(FIRST OFFICER'S CONTROL WHEEL IS EQUIVALENT)

B

CAPTAIN'S CONTROL WHEEL
(FIRST OFFICER'S CONTROL WHEEL IS EQUIVALENT)

C

1 CAPTAIN'S TILLER ASSEMBLY
P/N 275A2101-2 AND 275A2101-3
CONTAIN MORE THAN ONE WASHER

K64925 S0006575797_V5

Nose Landing Gear Steering Control Wheel Installation
Figure 401/32-51-41-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-41-000-802

3. Nose Landing Gear Tiller Assembly Removal

(Figure 402)

A. General

(1) This procedure provides instructions to remove the tiller assembly.

B. References

Reference	Title
25-11-22-000-801	Flight Compartment Forward Side Panel Removal (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
211	Flight Compartment - Left
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Removal

SUBTASK 32-51-41-480-008

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-41-010-001

(2) Remove the aft access panel from the wheel well for the nose landing gear to get access to the turnbuckles for the NWS-A cable and the NWS-B cable.

SUBTASK 32-51-41-020-002

(3) Remove the control wheel [7], do this task: Nose Landing Gear Steering Control Wheel Removal, TASK 32-51-41-000-801.

SUBTASK 32-51-41-020-003

(4) Remove the sidewall [5] to get access to the tiller assembly [13] (TASK 25-11-22-000-801).

E. Nose Landing Gear Tiller Assembly Removal

SUBTASK 32-51-41-020-004

(1) Disconnect the NWS-A cable and the NWS-B cable from the drum [8]:

(a) Remove the nut [16] and washer [17].

(b) Loosen the tension at the turnbuckles for the NWS-A cable and the NWS-B cable.

(c) Remove the shaft [14], washer [18], and spacers [6].

(d) Remove the drum [8] from the housing assembly [3].

(e) Remove the pins [4] that hold the cable ends to the drum [8].

(f) Attach identification tags on the NWS-A cable and the NWS-B cable.

(g) Isolate the NWS-A cable and the NWS-B from the tiller assembly [13].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-41-020-005

(2) Remove the tiller assembly [13]:

(a) Remove the nuts [12] and washers [11] from the bolt [9] and bolts [15].

(b) Remove the bolt [9] and bolts [15] that attach the tiller assembly [13] to the mating structure.

(c) Remove the washers [10] from the bolt [9] and bolts [15].

(d) Remove the tiller assembly [13] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

F73269 S0006575794_V2

Nose Landing Gear Tiller Installation
Figure 402/32-51-41-990-802 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Landing Gear Tiller Installation
Figure 402/32-51-41-990-802 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

K64922 S0006575795_V2

Nose Landing Gear Tiller Installation
Figure 402/32-51-41-990-802 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S CONTROL WHEEL
(FIRST OFFICER'S CONTROL WHEEL IS EQUIVALENT)

B

CAPTAIN'S CONTROL WHEEL
(FIRST OFFICER'S CONTROL WHEEL IS EQUIVALENT)

C

3073972 S0000832826_V1

Nose Landing Gear Tiller Installation
Figure 402/32-51-41-990-802 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D

F73348 S0006575798_V2

Nose Landing Gear Tiller Installation
Figure 402/32-51-41-990-802 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-41-400-801

4. Nose Landing Gear Tiller Assembly Installation

(Figure 402)

A. General

(1) This procedure provides instructions to install the tiller assembly.

B. References

Reference	Title
25-11-22-400-801	Flight Compartment Forward Side Panel Installation (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Pins	32-51-41-03-045	LOM ALL
13	Tiller assembly	32-51-31-12-005	LOM ALL
		32-51-41-03-040	LOM ALL

E. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
211	Flight Compartment - Left
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Prepare for the Installation

SUBTASK 32-51-41-480-007

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

G. Nose Landing Gear Tiller Assembly Installation

SUBTASK 32-51-41-420-001

(1) Install the tiller assembly [13]:

(a) Put the tiller assembly [13] in its position for attachment to the mating structure.

(b) Align the holes in the tiller assembly [13] with the holes in the mating structure.

(c) Install the washers [10] on the bolt [9] and bolts [15].

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(d) Put the inboard bolt [15] through the hole in the mating structure and the hole in the tiller assembly [13].

(e) Put the outboard bolt [15] and bolt [9] through the holes in the tiller assembly [13] and the holes in the mating structure.

(f) Install the washers [11] and nuts [12] on the bolt [9] and bolts [15].

(g) Apply sealant, A00247, around the area of the bolt [9] and bolts [15] to seal them.

SUBTASK 32-51-41-420-002

(2) Connect the NWS-A cable and the NWS-B cable to the drum [8]:

(a) Put the cable fairleads of the NWS-A cable and the NWS-B cable in their position for attachment to the drum [8].

(b) Install the pins [4] to hold the cable ends to the drum [8].

(c) Remove the identification tags attached to the NWS-A cable and the NWS-B cable.

(d) Apply grease, D00013, to the bearings in the housing assembly [3].

(e) Install the drum [8] in the housing assembly [3].

(f) Install the shaft [14], spacers [6], and washer [18].

NOTE: Install the shaft with the missing tooth aligned in the drum.

(g) Install the washer [17] and nut [16].

(h) Tighten the nut [16].

SUBTASK 32-51-41-410-001

(3) Install the sidewall [5] (TASK 25-11-22-400-801).

SUBTASK 32-51-41-420-003

(4) Install the control wheel [7], do this task: Nose Landing Gear Steering Control Wheel Installation, TASK 32-51-41-400-802.

END OF TASK

TASK 32-51-41-400-802

5. Nose Landing Gear Steering Control Wheel Installation

(Figure 402)

A. General

(1) This procedure provides instructions to install the control wheel [7].

B. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
32-51-00-820-802	Nose Wheel Steering System Adjustment (P/B 501)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	Control wheel	32-51-41-03-030	LOM ALL

E. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
211	Flight Compartment - Left
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

F. Prepare for the Installation

SUBTASK 32-51-41-480-006

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

G. Nose Landing Gear Control Wheel Installation

SUBTASK 32-51-41-420-004

(1) Install the control wheel [7] on the tiller assembly [13].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

(a) Install the rig pin NS2, from rigging pin kit, SPL-1585, in the captain's control wheel drum.

LOM 443, 444, 464-999

(b) Install the rig pin NS2, from rigging pin kit, SPL-1585, in the captain's control wheel drum or rig pin NS10 in the first Officer's control wheel drum.

LOM ALL

(c) Put the control wheel [7] in its position for attachment to the tiller assembly [13].

1) With the rig pin installed, make sure that the arrow on the control wheel [7] aligns with the center line of the sidewall access cover placard.

(d) Install the nut [2] and the washer [19] that attach the control wheel [7] to the tiller assembly [13].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 465-999

(e) For the captain steering control wheel, tighten the nut [2] as follows:

1) Make sure that the nut [2] is seated.

2) Loosen the nut [2] approximately two flats.

3) Observe the peak torque required to seat the nut [2] again.

4) Tighten the nut [2] to 100 in-lb (11.3 N·m) - 150 in-lb (16.9 N·m) above the observed peak torque.

a) Make sure that the full chamfer of the threaded shaft is protruded through the nut [2] after the final torque.

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LOM 450-464

(f) For the captain steering control wheel, tighten the nut [2] to 350 in-lb (39.5 N·m).

LOM 443, 444, 465-999

(g) For the first officer steering control wheel, tighten the nut [2] as follows:

1) Make sure that the nut [2] is seated.
2) Loosen the nut [2] approximately two flats.
3) Observe the peak torque required to seat the nut [2] again.
4) Tighten the nut [2] to 100 in-lb (11.3 N·m) - 150 in-lb (16.9 N·m) above the observed peak torque.
   a) Make sure that the full chamfer of the threaded shaft is protruded through the nut [2] after the final torque.

LOM 464

(h) For the first officer steering control wheel, tighten the nut [2] to 350 in-lb (39.5 N·m).

LOM ALL

(i) Install the plug button [1] on the control wheel [7].

SUBTASK 32-51-41-480-005

(2) Remove the rig pin from the control wheel drum.

SUBTASK 32-51-41-820-001

(3) Adjust the steering system on the nose wheel, do this task: Nose Wheel Steering System Adjustment, TASK 32-51-00-820-802.

NOTE: It is not necessary to do the adjustment and system test of the nose wheel steering system if no other part has been disturbed.

SUBTASK 32-51-41-820-002

(4) Test the steering system on the nose wheel, do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801.

SUBTASK 32-51-41-410-003

(5) Install the aft access panel in the wheel well for the nose landing gear.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR STEERING ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Nose Gear Steering Actuator Removal

(2) Nose Gear Steering Actuator Installation

(3) Nose Gear Hydraulic Swivel Removal

(4) Nose Gear Hydraulic Swivel Installation

(5) Nose Gear Steering Actuator Test.

B. There are two identical actuator assy [3] installed on the nose landing gear, just above the wheels.

C. The actuator assy [3] weighs 22 pounds (10 Kilos) when it is filled with hydraulic fluid.

TASK 32-51-51-000-801

2. Nose Gear Steering Actuator Removal

(Figure 401)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1901	Spanner Wrench - Steering Collar Retainer, NLG Part #: C32040-6 Supplier: 81205 Opt Part #: C32040-1 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for the Removal

SUBTASK 32-51-51-860-007

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-51-860-010

(2) Make sure that the wheels of the nose landing gear are in the centered position.

(a) If the wheels are not in the centered position, do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801.

SUBTASK 32-51-51-860-011

(3) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-51-860-012

(4) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

SUBTASK 32-51-51-860-013

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Install the NLG Towing Lever lock NLG towing lever pin, SPL-1499, through the towing lever.

NOTE: You use the NLG Towing Lever lock NLG towing lever pin, SPL-1499, to hold the towing lever in the TOW position.

E. Actuator Assembly Removal

SUBTASK 32-51-51-020-001

(1) Disconnect the torsion links at the apex joint, do this task: Nose Landing Gear Torsion Link Disconnection, TASK 32-21-31-000-803.

SUBTASK 32-51-51-980-001

(2) Turn the steering collar far enough to permit access to the rod end of the actuator assy [3] that you will remove.

SUBTASK 32-51-51-020-002

(3) Remove the cotter pin [6], nut [5], washer [4], bushings [2], anti-rotation washers [22] (not on all airplanes), and pin [1] to disconnect the rod end of the actuator assy [3] from the steering collar.

SUBTASK 32-51-51-020-009

(4) Remove the lockwire from the bolts [9] that attach the upper steering sleeve [23] and the lower steering plate [18].

SUBTASK 32-51-51-020-010

(5) Remove the bolts [9], washers [7], and standoffs [8] that hold the two front feet of the metering valve assy to the upper steering sleeve [23] and the lower steering plate [18].

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SUBTASK 32-51-51-020-003

(6) Remove the nuts [13], bolts [11], washers [12], and clamps [10] that attach the trunnion of the actuator assy [3] to the bushed hole in the upper steering sleeve [23] and the steering valve swivel.

NOTE: The hydraulic ports will be open when you remove the trunnion of the actuator assembly from the steering valve swivel. Make sure that the area around trunnion is clean before the hydraulic ports are open to atmosphere, to prevent contamination.

SUBTASK 32-51-51-020-013

(7) Remove the lockwire from the bolts [14].

SUBTASK 32-51-51-020-005

(8) Remove the bolts [14], washers [15], and lock tab [16] from the steering collar retainer nut [17].

SUBTASK 32-51-51-800-001

(9) Hold the lower steering plate [18] in its position while you loosen the steering collar retainer nut [17], using spanner wrench, SPL-1901, and lower it down the outer cylinder.

SUBTASK 32-51-51-010-001

(10) Hold the actuator assy [3] in its position and lower the lower steering plate [18] down the outer cylinder.

SUBTASK 32-51-51-020-007

(11) Remove the actuator assy [3] from the cavity in the steering valve swivel and the bushed hole in the upper steering sleeve [23].

SUBTASK 32-51-51-480-002

(12) Install caps in the open hydraulic ports of the steering valve swivel and the trunnion of the actuator assy [3].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Gear Steering Actuator Installation
Figure 401/32-51-51-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 NOT ON ALL AIRPLANES

F76502 S0006575806_V2

Nose Gear Steering Actuator Installation
Figure 401/32-51-51-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F76506 S0006575807_V2

Nose Gear Steering Actuator Installation
Figure 401/32-51-51-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F76508 S0006575808_V3

Nose Gear Steering Actuator Installation
Figure 401/32-51-51-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A-A

G50708 S0006575809_V4

Nose Gear Steering Actuator Installation
Figure 401/32-51-51-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-51-400-801

3. Nose Gear Steering Actuator Installation

(Figure 401)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1901	Spanner Wrench - Steering Collar Retainer, NLG Part #: C32040-6 Supplier: 81205 Opt Part #: C32040-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00153	Fluid - Hydraulic Fluid, Fire Resistant (Interchangeable And Intermixable With BMS 3-11 Type V)	BMS3-11 Type IV
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Actuator assy	32-51-51-01A-010	LOM ALL
6	Pin	32-51-51-01A-215	LOM ALL

E. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

F. Prepare for the Installation

SUBTASK 32-51-51-860-005

(1) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-51-080-002

(2) Remove the caps from the open hydraulic ports of the steering valve swivel and the trunnion of the actuator assy [3].

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(a) Make sure that the area around the trunnion and the steering valve is clean.

NOTE: When the hydraulic ports are open you can contaminate the trunnion of the actuator assembly and the cavity on the steering valve swivel.

SUBTASK 32-51-51-600-001

(3) Do these steps to prepare the actuator assy [3] for installation:

(a) Fill the actuator assy [3] with hydraulic fluid, D00153, until it is full.

(b) Apply the hydraulic fluid, D00153, to the transfer tubes [19], back-up rings [20], and o-rings [21] in the trunnion of the actuator assy [3].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(c) Apply a thin layer of Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (optional) to the threads, thread reliefs, and mating surfaces of the steering collar retainer nut [17].

(d) Apply a thin layer of Cor-Ban 27L Compound, G50237, (preferred) or corrosion inhibiting material, G50136, (optional) to the threads, thread reliefs, and mating surfaces of the nut [5], nuts [13], bushings [2], pin [1], bolts [9], bolts [11], bolts [14], and standoffs [8].

G. Actuator Assembly Installation

SUBTASK 32-51-51-420-001

(1) Put the trunnion of the actuator assy [3] into the bushed hole in the upper steering sleeve [23] and the cavity of the steering valve swivel.

NOTE: The Left Hand actuator should be installed on the Left side and the Right Hand actuator should be installed on the right side.

(a) Be careful to align the transfer tubes [19] as you lift the actuator assy [3] into position.

(b) Hold the actuator assy [3] after the trunnion shoulder is in full contact with the flange of the bushing in the upper steering sleeve [23].

SUBTASK 32-51-51-410-001

(2) Hold the actuator assy [3] in its position and raise the lower steering plate [18] up the outer cylinder. Put the lower trunnion of the actuator assy [3] into the hole in the lower steering plate [18].

SUBTASK 32-51-51-420-002

(3) Hold the lower steering plate [18] in its position and move the steering collar retainer nut [17] up the outer cylinder to install it on the threads below the lower steering plate [18].

(a) Tighten the steering collar retainer nut [17] to 50 ft-lb (68 N·m) - 75 ft-lb (102 N·m) using spanner wrench, SPL-1901.

(b) If it is necessary, loosen the steering collar retainer nut [17] a minimum amount to install the lock tab [16], washers [15], and bolts [14].

(c) Install lockwire on the bolts [14].

SUBTASK 32-51-51-420-006

(4) Install the clamps [10], bolts [11], washers [12], and nuts [13] that attach the trunnion of the actuator assy [3] to the steering valve swivel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-51-020-008

(5) Install the standoffs [8], bolts [9], and washers [7] that hold the upper steering sleeve [23] and the lower steering plate [18].

(a) Install lockwire on the bolts [9].

SUBTASK 32-51-51-980-002

(6) Turn the steering collar far enough to permit access to the rod end of the actuator assy [3] that you will install.

SUBTASK 32-51-51-420-004

(7) Install the anti-rotation washers [22] (not on all airplanes), bushings [2], pin [1], washer [4], and nut [5] to connect the rod end of the actuator assy [3] to the steering collar.

(a) Tighten the nut [5] to 50 ft-lb (68 N·m) – 58 ft-lb (79 N·m).

(b) If it is necessary, loosen the nut [5] to the nearest castellation to align the hole in the pin [1].

(c) Install the cotter pin [6].

1) Make sure that the ends of the cotter pin are not closer than 0.10 in. (2.54 mm) to the steering collar when they are bent.

SUBTASK 32-51-51-420-005

(8) Connect the torsion links at the apex joint. Do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

NOTE: If you will do the post-installation test with the torsion links disconnected (Method 3), then it is not necessary to do this step at this time. The torsion links will be connected at the end of the test.

SUBTASK 32-51-51-860-006

(9) Remove the NLG towing lever pin, SPL-1499, from the towing lever.

SUBTASK 32-51-51-710-005

(10) Do this task: Nose Gear Steering Actuator Test, TASK 32-51-51-720-801.

END OF TASK

TASK 32-51-51-000-802

4. Nose Gear Hydraulic Swivel Removal

(Figure 402)

A. General

(1) This task contains steps to replace either the entire swivel assembly or the individual swivels from the assembly.

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Location Zones

Zone	Area
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for the Removal

SUBTASK 32-51-51-480-005

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-51-040-002

(2) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

E. Remove the Hydraulic Swivel (Individual Swivels)

SUBTASK 32-51-51-020-015

(1) Remove the hydraulic lines [26] from the swivel assembly [25].

SUBTASK 32-51-51-020-017

(2) Remove the band clamps [27] from the swivel assembly [25].

SUBTASK 32-51-51-020-018

(3) Remove the swivel [32] from the swivel assembly [25].

F. Remove the Hydraulic Swivel Assembly

SUBTASK 32-51-51-020-016

(1) Remove the hydraulic lines [26] from the swivel assembly [25].

SUBTASK 32-51-51-020-019

(2) Remove the pin [30], nut [31], washer [29], and bolt [28] from the right trunnion [24].

SUBTASK 32-51-51-020-020

(3) Remove the swivel assembly [25].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Landing Gear Hydraulic Swivel
Figure 402/32-51-51-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-51-400-802

5. Nose Gear Hydraulic Swivel Installation

(Figure 402)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D50180	Grease - Aircraft General Purpose (AeroShell Grease 33)	BMS3-33, MIL-PRF-23827
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Location Zones

Zone	Area
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Nose Gear Hydraulic Swivel (Assembly) Installation

SUBTASK 32-51-51-640-001

(1) Lubricate the Inside Diameter (ID) of the pin of the right trunnion [24] and the Outside Diameter (OD) of the bracket of the swivel assembly [25] with AeroShell Grease 33, D50180.

SUBTASK 32-51-51-420-010

(2) Put bracket of the swivel assembly [25] in the pin of the right trunnion [24] and align the hole for the bolt [28].

SUBTASK 32-51-51-420-011

(3) Install the bolt [28].

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin coat of Cor-Ban 27L Compound, G50237, to the shank and threads of the bolt [28].

NOTE: If Cor-Ban 27L Compound, G50237, is not available, you can use corrosion inhibiting material, G50136, as an approved alternate.

(b) Install the bolt [28], washer [29], and nut [31].

(c) Tighten the nut [31] to 20 in-lb (2 N·m) – 24 in-lb (3 N·m) above run-on torque and loosen to align the nearest castellation.

(d) Install the cotter pin [30].

SUBTASK 32-51-51-420-012

(4) Connect the hydraulic lines [26].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Nose Gear Hydraulic Swivel Installation

SUBTASK 32-51-51-420-009

(1) Install swivel [32] in swivel assembly [25].

(a) Position swivel [32] in the swivel assembly [25].

(b) Install the band clamps [27].

SUBTASK 32-51-51-420-013

(2) Connect the hydraulic lines [26].

F. Nose Gear Hydraulic Swivel Installation Test

SUBTASK 32-51-51-710-006

(1) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(a) Apply the hydraulic pressure for two minutes and make sure there are no leaks.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-51-040-001

(1) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805, if hydraulic power is not necessary.

——— END OF TASK ———

TASK 32-51-51-720-801

6. Nose Gear Steering Actuator Test

(Figure 403)

A. General

(1) This procedure provides instructions to do a post-installation test of the nose gear steering actuator.

(a) There are three methods to perform this task:

1) Method 1: On Ground/Grease Plates

2) Method 2: Airplane on Jacks

3) Method 3: On Ground with torsion links disconnected.

B. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-12-00-610-801	Hydraulic Reservoir Servicing (P/B 301)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)
32-51-00-820-805	Nose Wheel Steering System Adjustment Check (P/B 501)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

F. Prepare to the Test Steering System of the Nose Wheel

SUBTASK 32-51-51-610-001

(1) Do this task: Hydraulic Reservoir Servicing, TASK 12-12-00-610-801.

SUBTASK 32-51-51-820-001

(2) If necessary, adjust the steering system of the nose wheels (Nose Wheel Steering System Adjustment Check, TASK 32-51-00-820-805).

NOTE: Do not do this step if you do a steering actuator procedure where rig checks are not necessary. If you only replace the steering actuator, start the procedure with the nose wheels set to the center position. Then, if you do not adjust the cable rigging, no rig checks are necessary.

SUBTASK 32-51-51-480-003

WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-51-580-001

(4) For Method 2, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-51-860-015

(5) For Method 2, make sure that the torsion links are connected at apex.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) It is not necessary to connect the conduit and clamps at this time, if they are loose or disconnected.

SUBTASK 32-51-51-860-016

(6) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 32-51-51-860-017

(7) For Methods 1 and 2, for the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-51-860-018

(8) Make sure that the control lever for the landing gear is in the DN position.

SUBTASK 32-51-51-860-019

(9) Make sure that the NOSE WHEEL STEERING ALTERNATE switch is in the NORM position.

SUBTASK 32-51-51-860-020

(10) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

G. Test of the Normal Steering Response

SUBTASK 32-51-51-860-021

(1) For Method 1, make sure that the greased plates are under the nose wheels.

SUBTASK 32-51-51-860-029

(2) For Method 1, do this task if not already done: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-51-51-860-030

(3) For Method 2 and 3, disconnect the torsion link apex joint, do this task: Nose Landing Gear Torsion Link Disconnection, TASK 32-21-31-000-803.

(a) Put the airplane in the ground mode.

NOTE: To avoid damage during operation, remove the bracket that attaches the conduit to the Nose Landing Gear (NLG) landing/taxi light, and the other clamps on torsion links.

NOTE: Secure the torsion link assembly to avoid damage during the operation.

SUBTASK 32-51-51-860-022

WARNING MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(a) Make sure that one of the main gears is in the ground mode.

NOTE: The air/ground system needs two inputs to transition into the ground mode.

SUBTASK 32-51-51-710-002

(5) Make sure that the Captain's control wheel operates correctly.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Turn the Captain's control wheel to operate the nose wheel steering through a minimum of 6 full cycles.

1) Make sure that it operates freely and smoothly.

NOTE: One cycle is to move the nose wheel steering from the center position to the full right position. Then move the steering to the full left position and then back to the center position.

(b) Make sure that there is no leakage of hydraulic fluid from the tubing and fittings of the nose gear steering.

1) From the landing gear selector valve to the valves on the nose steering actuators.

(c) Turn the nose wheels with the Captain's control wheel from the center position to the LEFT (CCW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(d) Release the Captain's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

(e) Turn the nose wheels with the Captain's control wheel from the center position to the RIGHT (CW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(f) Release the Captain's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

LOM 443, 444, 464-999

SUBTASK 32-51-51-710-003

(6) Make sure that the First Officer's control wheel operates correctly.

(a) Turn the First Officer's control wheel to operate the nose wheel steering through at least 6 complete cycles, and make sure that it operates freely and smoothly.

NOTE: One cycle of the system is from center to full right, then to full left, then back to center.

(b) Turn the nose wheels with the First Officer's control wheel from the center position to the LEFT (CCW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(c) Release the First Officer's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

(d) Turn the nose wheels with the First Officer's control wheel from the center position to the RIGHT (CW) stop position.

1) Make sure that the steering angle is 78 +/-2 degrees on the decal that is on the nose gear shock strut.

(e) Release the First Officer's control wheel and let it return to the center position.

1) Make sure that the steering angle is at 0 +/-1 degree.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-51-710-004

(1) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-51-860-028

(2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

SUBTASK 32-51-51-860-023

(3) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 32-51-51-410-002

(4) Make sure that you install the summing mechanism cover [35] with bolts [33] and washers [34].

SUBTASK 32-51-51-480-004

WARNING ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Make sure that the towing lever to the TOW position.

(a) Use the NLG towing lever pin, SPL-1499.

SUBTASK 32-51-51-010-002

(6) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-51-51-860-024

WARNING WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

WARNING	DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(7) Remove the safety tag and close this circuit breaker:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

SUBTASK 32-51-51-410-003

(8) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-51-51-860-025

(9) For Method 1, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-51-860-026

(10) For Method 1, remove the greased plates from under the nose wheels.

SUBTASK 32-51-51-860-027

(11) For Method 2 and 3, connect the torsion link apex pin, do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

(a) Reconnect the clamps, brackets and conduit attached to the Nose Landing Gear/Taxi light.

SUBTASK 32-51-51-580-002

(12) If it is necessary, do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Wheel Steering System Adjustment
Figure 403/32-51-51-990-804

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE GEAR STEERING ACTUATOR - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) An external, non-disassembled detailed visual inspection of the steering actuator rod ends on the nose gear.

(2) A detailed dimensional inspection of the steering actuator trunnions and associated steering plate bushings on the nose gear.

C. There are two identical steering actuators installed on the nose landing gear, just above the wheels.

TASK 32-51-51-200-801

2. Nose Gear Steering Actuator Rod End Visual Inspection

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-31-000-803	Nose Landing Gear Torsion Link Disconnection (P/B 401)
32-21-31-400-803	Nose Landing Gear Torsion Link Connection (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Prepare for the Visual Inspection

SUBTASK 32-51-51-860-008

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

(a) Make sure the wheels of the nose landing gear are in the centered position.

(b) Depressurize hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(d) Install the NLG towing lever pin, SPL-1499 through the towing lever.

NOTE: You use the NLG Towing Lever Lock Pin to hold the towing lever in the TOW position.

E. Actuator Rod End Visual Inspection

SUBTASK 32-51-51-020-011

(1) If necessary, disconnect the torsion links at the apex joint. To do this, do this task: Nose Landing Gear Torsion Link Disconnection, TASK 32-21-31-000-803.

SUBTASK 32-51-51-980-003

(2) Turn the steering collar far enough to permit visual access to the rod end that you will inspect.

SUBTASK 32-51-51-020-012

(3) Do an external, non-disassembled, visual inspection of the nut, washer, bushings, and pin that attach the rod end to the steering collar.

(a) Make sure the rod end is secure and that there is no damage.

(b) Make sure there is no excessive or unusual movement in the rod end bushings and the rod end pin.

SUBTASK 32-51-51-420-007

(4) If necessary, connect the torsion links at the apex joint. To do this, do this task: Nose Landing Gear Torsion Link Connection, TASK 32-21-31-400-803.

SUBTASK 32-51-51-860-009

(5) Remove the NLG towing lever pin, SPL-1499 from the towing lever.

——— END OF TASK ———

TASK 32-51-51-200-802

3. Nose Gear Steering Actuator Trunnion and Trunnion Bushing Dimensional Inspection

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-51-51-000-801	Nose Gear Steering Actuator Removal (P/B 401)
32-51-51-400-801	Nose Gear Steering Actuator Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Prepare for the Inspection

(Figure 601)

SUBTASK 32-51-51-860-014

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

(a) Make sure that the wheels of the nose landing gear are in the centered position.

(b) Depressurize hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(c) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(d) Install the NLG towing lever pin, SPL-1499, through the towing lever.

NOTE: You use the NLG Towing Lever Lock Pin to hold the towing lever in the TOW position.

E. Actuator Trunnion and Trunnion Bushing Inspection

SUBTASK 32-51-51-020-014

(1) Remove the Steering Actuator, do this task: Nose Gear Steering Actuator Removal, TASK 32-51-51-000-801.

SUBTASK 32-51-51-220-001

(2) Inspect and measure the Steering Actuator Upper and Lower Trunnions outside diameter for wear or galling.

SUBTASK 32-51-51-220-002

(3) Inspect and measure the trunnion bushings installed in the Upper and Lower Steering Plates for wear on the bushing inside diameter.

SUBTASK 32-51-51-220-004

(4) Compare the dimensions you measured with the permitted wear limits given in Table 601. If the measured parts are not in tolerance, replace or repair the part as shown in the Component Maintenance Manual.

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Table 601/32-51-51-993-802

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#1 UPPER TRUNNION BUSHING	I.D.	2.1250 in 53.975 mm	2.1294 in 54.087 mm	2.1305 in 54.115 mm*[1]	0.0073 in
#1 UPPER ACTUATOR TRUNNION	O.D.	2.1230 in 53.924 mm	2.1250 in 53.975 mm	2.1200 in 53.848 mm	0.1854 mm
#2 LOWER TRUNNION BUSHING	I.D	1.3750 in 34.925 mm	1.3790 in 35.027 mm	1.3802 in 35.057 mm*[1]	0.0073 in
#2 LOWER ACTUATOR TRUNNION	O.D.	1.3730 in 34.874 mm	1.3750 in 34.925 mm	1.3710 in 34.823 mm	0.1854 mm

*[1] Wear through the KARON coating is acceptable if not mechanically worn beyond limits shown above.

SUBTASK 32-51-51-420-008

(5) Install the Steering Actuator. To do this, do this task: Nose Gear Steering Actuator Installation, TASK 32-51-51-400-801.

SUBTASK 32-51-51-080-003

(6) Remove the NLG towing lever pin, SPL-1499, from the towing lever.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Steering Actuator Trunnion Wear Limits
Figure 601/32-51-51-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR STEERING SUMMING MECHANISM - REMOVAL/INSTALLATION

1. General

A. This procedure has four tasks:

(1) Removal of the summing mechanism for the steering system for the nose landing gear (without using cable clamp assembly).

(2) Installation of the summing mechanism for the steering system for the nose landing gear (without using cable clamp assembly).

(3) Removal of the summing mechanism for the steering system for the nose landing gear (using cable clamp assembly).

(4) Installation of the summing mechanism for the steering system for the nose landing gear (using cable clamp assembly).

TASK 32-51-52-020-801

2. Summing Mechanism Removal (Without Using Cable Clamp Assembly)

(Figure 401)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-51-00-820-803	General Check of the Adjustment of the Nose Wheel Steering System (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Access Panels

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Removal

SUBTASK 32-51-52-480-007

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-52-860-001

(2) Make sure that the wheels of the nose landing gear are in the centered position.

SUBTASK 32-51-52-010-001

(3) Remove the aft access panel from the left sidewall of the nose wheel well to get access to the turnbuckles [3] for the NWSA and NWSB cables.

Open this access panel:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

SUBTASK 32-51-52-480-002

(4) Install these rig pins from the rigging pin kit, SPL-1585 (TASK 32-51-00-820-803):

(a) The rig pin in the Captain's steering tiller.

LOM 443, 444, 464-999

(b) The rig pin in the first officer's steering tiller.

LOM ALL

(c) The rig pin in the rudder pedal interconnect quadrant

SUBTASK 32-51-52-860-002

(5) Remove the pressure from hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-52-860-003

(6) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

SUBTASK 32-51-52-860-004

> **WARNING** ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(7) Install the NLG towing lever pin, SPL-1499, through the towing lever.

NOTE: You use the NLG Towing Lever Lock Pin to hold the towing lever in the TOW position.

F. Nose Landing Gear Steering Summing Mechanism Removal

SUBTASK 32-51-52-010-002

(1) Remove the screws [5] and washers [6] that hold the summing mechanism cover [10] to the summing mechanism bracket.

SUBTASK 32-51-52-020-001

(2) Remove the clips [4] from the turnbuckles [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-52-020-002

(3) Loosen the cable NWS-A [1] and cable NWS-B [2] at the turnbuckles [3].

SUBTASK 32-51-52-020-003

(4) Remove the nuts [24], bolts [21], washers [22], bushings [23], and pulleys [20] from the pulley brackets on the summing mechanism assembly [11].

SUBTASK 32-51-52-020-004

(5) Remove the nut [15], washer [14], bushing [13], and bolt [12] to disconnect the link assembly [16] from the summing mechanism assembly [11].

SUBTASK 32-51-52-020-005

(6) Remove the nuts [19], bolts [17], and washers [18] to disconnect summing mechanism assembly [11] from the bracket assembly.

SUBTASK 32-51-52-000-001

(7) Remove the summing mechanism assembly [11].

SUBTASK 32-51-52-020-006

(8) If it is necessary to remove the pulley bracket assembly from the summing mechanism assembly [11], remove the nuts [27], bushings [26], bolts [25], and washers [14].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H86104 S0006575820_V2

Nose Landing Gear Steering Summing Mechanism Installation
Figure 401/32-51-52-990-801 (Sheet 1 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

A

K63612 S0006575821_V2

Nose Landing Gear Steering Summing Mechanism Installation
Figure 401/32-51-52-990-801 (Sheet 2 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H86122 S0006575822_V2

Nose Landing Gear Steering Summing Mechanism Installation
Figure 401/32-51-52-990-801 (Sheet 3 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S CONTROL WHEEL
(FIRST OFFICER'S CONTROL WHEEL IS EQUIVALENT)

B

1 NWSA CABLE IS INSTALLED FORWARD FOR CAPTAIN'S CONTROL WHEEL.

2 NWSB CABLE IS INSTALLED FORWARD FOR FIRST OFFICER'S CONTROL WHEEL.

K63681 S0006575823_V3

Nose Landing Gear Steering Summing Mechanism Installation
Figure 401/32-51-52-990-801 (Sheet 4 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H86139 S0006575824_V2

Nose Landing Gear Steering Summing Mechanism Installation
Figure 401/32-51-52-990-801 (Sheet 5 of 8)

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Nose Landing Gear Steering Summing Mechanism Installation
Figure 401/32-51-52-990-801 (Sheet 6 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H86478 S0006575826_V3

Nose Landing Gear Steering Summing Mechanism Installation
Figure 401/32-51-52-990-801 (Sheet 7 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUMMING MECHANISM ASSEMBLY

G

H86631 S0006575827_V3

Nose Landing Gear Steering Summing Mechanism Installation
Figure 401/32-51-52-990-801 (Sheet 8 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-52-420-801

3. Summing Mechanism Installation (Without Using Cable Clamp Assembly)
(Figure 401)

A. References

Reference	Title
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
32-51-00-820-802	Nose Wheel Steering System Adjustment (P/B 501)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
11	Summing mechanism assembly	32-51-52-03-185	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Access Panels

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

F. Summing Mechanism Installation

SUBTASK 32-51-52-210-001

(1) Make sure that the wheels of the nose landing gear are in the centered position .

NOTE: The graduated scales on the steering collar and arrows on the lower plate show the angular position of the wheels when the torsion links are connected.

SUBTASK 32-51-52-400-001

(2) Do the steps below to attach the summing mechanism assembly [11] to the bracket assembly.

(a) Align the summing mechanism assembly [11] with the plate.

(b) Align the link assembly [16] with the summing mechanism assembly [11].

(c) Install the bolts [17], washers [18], and nuts [19] to connect the summing mechanism assembly [11] to the bracket assembly.

SUBTASK 32-51-52-420-001

(3) Do the steps below to install the pulley bracket assembly:

(a) Put the pulley bracket assembly in its location.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Install the bushings [26], washers [14], bolts [25], and nuts [27].

(c) Tighten the bolts [25] to 20 in-lb (2.26 N·m) - 25 in-lb (2.82 N·m) above the run-on torque.

SUBTASK 32-51-52-420-002

(4) If it is necessary to install the pulley on the pulley bracket assembly, do the steps below:

(a) Install the bushing [23].

(b) Align the pulley with the pulley bracket assembly.

(c) Install the bolt [21], washer [22], and nut [24].

(d) Tighten the bolt [21] to 50 in-lb (5.65 N·m) - 75 in-lb (8.47 N·m) above the run-on torque.

SUBTASK 32-51-52-480-003

WARNING ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Make sure that the NLG towing lever pin, SPL-1499, is installed through the towing lever.

SUBTASK 32-51-52-480-004

(6) Make sure that these rig pins from the rigging pin kit, SPL-1585, pin set are installed:

(a) The rig pin in the Captain's steering tiller.

LOM 443, 444, 464-999

(b) The rig pin in the first officer's steering tiller.

LOM ALL

(c) The rig pin in the rudder pedal interconnect quadrant

SUBTASK 32-51-52-420-003

(7) Install the bushing [13], bolt [12], washer [14], and nut [15] to connect the link assembly [16] to the summing mechanism assembly [11].

(a) Adjust the link assembly [16] to easily install the rig pin in the summing mechanism rig pin hole.

(b) Remove the rig pin from the summing mechanism.

SUBTASK 32-51-52-420-004

(8) Tighten the cable NWS-A [1] and cable NWS-B [2] at the turnbuckles [3] and adjust the tension, do this task: Nose Wheel Steering System Adjustment, TASK 32-51-00-820-802.

SUBTASK 32-51-52-420-005

(9) Install the clips [4] on the turnbuckles [3].

SUBTASK 32-51-52-080-001

(10) Remove these rig pins:

(a) The rig pin in the Captain's steering tiller.

LOM 443, 444, 464-999

(b) The rig pin in the first officer's steering tiller.

LOM ALL

(c) The rig pin in the rudder pedal interconnect quadrant

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-52-710-001

(11) Do a test on the steering system of the nose wheel, do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801.

SUBTASK 32-51-52-410-001

(12) Close the access panels to the nose wheel steering system mechanism and cable turnbuckles (Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801).

Close this access panel:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

SUBTASK 32-51-52-420-006

(13) Put the summing mechanism cover [10] in position and install the screws [5] and washers [6].

END OF TASK

TASK 32-51-52-020-802

4. Summing Mechanism Removal (Using Cable Clamp Assembly)

(Figure 402, Figure 403)

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-13966	Clamp Assy - Steering Cables, NLG Part #: C32055-1 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Prepare for the Removal

SUBTASK 32-51-52-480-008

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-52-860-005

(2) Make sure that the wheels of the nose landing gear are in the centered position.

SUBTASK 32-51-52-860-006

(3) Remove the pressure from hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-52-860-007

(4) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

SUBTASK 32-51-52-860-008

WARNING	ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Install the NLG towing lever pin, SPL-1499, through the towing lever.

NOTE: You use the NLG Towing Lever Lock Pin to hold the towing lever in the TOW position.

E. Nose Landing Gear Steering Summing Mechanism Removal

SUBTASK 32-51-52-010-003

(1) Remove the screws [5] and washers [6] that hold the summing mechanism cover [10] to the summing mechanism bracket.

SUBTASK 32-51-52-020-007

(2) Use the cable clamp, SPL-13966, to remove the tension in steering cable NWS-A [1] and cable NWS-B [2] between the trunnion and link assembly.

NOTE: You may need to remove one of the slider bolts in order to install the base plate over the cables.

(a) Position the base plate against the trunnion, with steering cables positioned in the base plate grooves.

NOTE: Use the Lock-Trunnion Nut to align the base plate into position.

(b) Tighten the clamp bolts to 70 in-lb (7.91 N·m) - 80 in-lb (9.04 N·m) onto the clamp plate.

(c) Turn only the tension bolt until the clamp carrier contacts the head of the slider bolts.

1) Make sure that you do not exceed a maximum of 0.10 in. (2.54 mm) of cable stretch.

SUBTASK 32-51-52-020-008

(3) Remove the nuts [24], bolts [21], washers [22], bushings [23], and pulleys [20] from the pulley brackets on the summing mechanism assembly [11].

SUBTASK 32-51-52-020-009

(4) Remove the nut [15], washer [14], bushing [13], and bolt [12] to disconnect the link assembly [16] from the summing mechanism assembly [11].

SUBTASK 32-51-52-020-010

(5) Remove the nuts [19], bolts [17], and washers [18] to disconnect summing mechanism assembly [11] from the bracket assembly.

SUBTASK 32-51-52-000-002

(6) Remove the summing mechanism assembly [11].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-52-020-011

(7) If it is necessary to remove the pulley bracket assembly from the summing mechanism assembly [11], remove the nuts [27], bushings [26], bolts [25], and washers [14].

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2243808 S0000502663_V2

Nose Landing Gear Steering Summing Mechanism Installation
Figure 402/32-51-52-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2243812 S0000502664_V3

Nose Landing Gear Steering Summing Mechanism Installation
Figure 402/32-51-52-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUMMING MECHANISM ASSEMBLY

C

2243834 S0000502665_V2

Nose Landing Gear Steering Summing Mechanism Installation
Figure 402/32-51-52-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2240737 S0000501185_V2

Steering Cables Clamp Assembly
Figure 403/32-51-52-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-52-420-802

5. Summing Mechanism Installation (Using Cable Clamp Assembly)

(Figure 402, Figure 403)

A. References

Reference	Title
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1499	Pin - Lock, NLG Towing Lever Part #: A09003-2 Supplier: 81205 Opt Part #: A09003-1 Supplier: 81205
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-13966	Clamp Assy - Steering Cables, NLG Part #: C32055-1 Supplier: 81205

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
11	Summing mechanism assembly	32-51-52-03-185	LOM ALL

D. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Summing Mechanism Installation

SUBTASK 32-51-52-210-002

(1) Make sure that the wheels of the nose landing gear are in the centered position.

NOTE: The graduated scales on the steering collar and arrows on the lower plate show the angular position of the wheels when the torsion links are connected.

SUBTASK 32-51-52-400-002

(2) Do the steps below to attach the summing mechanism assembly [11] to the bracket assembly.

(a) Align the summing mechanism assembly [11] with the plate.

(b) Align the link assembly [16] with the summing mechanism assembly [11].

(c) Install the bolts [17], washers [18], and nuts [19] to connect the summing mechanism assembly [11] to the bracket assembly.

SUBTASK 32-51-52-420-007

(3) Do the steps below to install the pulley bracket assembly:

(a) Put the pulley bracket assembly in its location.

(b) Install the bushings [26], washers [14], bolts [25], and nuts [27].

(c) Tighten the bolts [25] to 20 in-lb (2.26 N·m) - 25 in-lb (2.82 N·m) above the run-on torque.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-52-420-008

(4) If it is necessary to install the pulley on the pulley bracket assembly, do the steps below:

(a) Install the bushing [23].

(b) Align the pulley with the pulley bracket assembly.

(c) Install the bolt [21], washer [22], and nut [24].

(d) Tighten the bolt [21] to 50 in-lb (5.65 N·m) - 75 in-lb (8.47 N·m) above the run-on torque.

SUBTASK 32-51-52-480-006

WARNING ONLY USE THE CORRECT PIN FOR THE AIRPLANE MODEL. IF YOU USE AN INCORRECT PIN, THE HYDRAULIC STEERING CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(5) Make sure that the NLG towing lever pin, SPL-1499, is installed through the towing lever.

SUBTASK 32-51-52-420-009

(6) Install the bushing [13], bolt [12], washer [14], and nut [15] to connect the link assembly [16] to the summing mechanism assembly [11].

(a) Adjust the link assembly [16] to easily install the rig pin NS4 from the rigging pin kit, SPL-1585, in the summing mechanism rig pin hole.

(b) Remove the rig pin NS4 from the summing mechanism.

SUBTASK 32-51-52-080-002

(7) Remove the cable clamp, SPL-13966.

SUBTASK 32-51-52-710-002

(8) Do a test on the steering system of the nose wheel, do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801.

SUBTASK 32-51-52-420-010

(9) Put the summing mechanism cover [10] in position and install the screws [5] and washers [6].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STEERING COLLAR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the steering collar (without using cable clamp assembly)

(2) Installation of the steering collar (without using cable clamp assembly)

(3) Removal of the steering collar (using cable clamp assembly)

(4) Installation of the steering collar (using cable clamp assembly)

(5) Removal of the upper steering sleeve

(6) Installation of the upper steering sleeve.

TASK 32-51-61-000-801

2. Steering Collar Removal (Without Using Cable Clamp Assembly)

(Figure 401)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-24-000-801	NLG Inner Cylinder Removal (P/B 401)
53-14-01-020-801	Nose Wheel Well Access Panels - Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-1901	Spanner Wrench - Steering Collar Retainer, NLG Part #: C32040-6 Supplier: 81205 Opt Part #: C32040-1 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Access Panels

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Prepare for the Removal

SUBTASK 32-51-61-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-61-860-001

(2) Make sure the wheels of the nose landing gear are in the centered position.

SUBTASK 32-51-61-860-002

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-61-860-003

(4) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

SUBTASK 32-51-61-860-004

(5) Install the rigging pin kit, SPL-1585 through the towing lever.

NOTE: You use the NLG Towing Lever Lock Pin to hold the towing lever in the TOW position.

SUBTASK 32-51-61-410-016

(6) Open this access panel to get access to the nose wheel steering system mechanism and cable turnbuckles:

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Removal, TASK 53-14-01-020-801.

SUBTASK 32-51-61-480-002

(7) Install these rig pins from the rig pin set, rigging pin kit, SPL-1585:

(a) Rig pin in the nose wheel steering tiller

(b) Rig pin in the rudder pedal interconnect quadrant

(c) Rig pin in the summing mechanism.

SUBTASK 32-51-61-020-001

(8) Remove the clips [34] from the turnbuckles [36].

SUBTASK 32-51-61-020-002

(9) Loosen the cable NWS-A/B [35] at the turnbuckles [36].

SUBTASK 32-51-61-020-003

(10) Remove the pins [37] to disconnect the cable NWS-A/B from the steering collar [5].

F. Steering Collar Removal

(Figure 401)

SUBTASK 32-51-61-680-001

> **WARNING** DO NOT LOOSEN THE VALVE BODY UNLESS YOU DEFLATE THE SHOCK STRUT FULLY. AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURY TO PERSONNEL.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(WARNING PRECEDES)

> **WARNING** YOU MUST KEEP THE CHARGING VALVE OPEN. PRESSURE INSIDE THE STRUT CAN CAUSE A LOOSE GLAND NUT TO BLOW OFF AND CAUSE INJURY TO PERSONNEL.

(1) Deflate the shock strut for the nose gear, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

(a) Remove the valve cap from the charging valve at the top of the shock strut.

(b) Loosen the outer hexnut two turns maximum.

NOTE: The fluid from the shock strut will begin to foam as soon as the pressure drops to ambient. Deflate the shock strut slowly to prevent loss of fluid through the air valve.

SUBTASK 32-51-61-580-001

(2) Lift the nose of the airplane until the shock strut is extended about ten inches, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-61-020-004

(3) Disconnect the box assembly [1] from the upper torsion link [13]:

NOTE: Disconnect the box assembly [1] with the electrical conduits attached.

(a) Remove the nuts [33], and the washers [32] from the bolts [30].

(b) Remove the bolts [30] and washers [31] from the upper torsion link [13].

SUBTASK 32-51-61-020-005

(4) Remove the clamps [23] that hold the electrical conduits [20] to the bracket [24]:

(a) Remove the screws [21] that hold the clamps [23] to the bracket [24].

(b) Remove the clamps [23], and the nut clips [22] from the bracket [24].

SUBTASK 32-51-61-020-007

(5) Disconnect the sensor brackets [15] from the upper torsion link [13]:

NOTE: Disconnect the brackets [15] with the sensors [14] and the electrical conduits [20] attached.

(a) Remove the nuts [19], and the washers [18] from the bolts [16].

(b) Remove the bolts [16] that hold the sensor brackets [15] to the upper torsion link [13].

(c) Remove the washers [17] from the bolts [16].

(d) Isolate the sensor brackets [15] from the upper torsion link [13].

1) If it is necessary, use a string to hold the sensor brackets [15] and attach the string over the top of the outer cylinder.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-51-61-020-008

(6) Disconnect the electrical conduit [29] from the bracket on the lower torsion link [28]:

(a) Remove the nuts [27], washers [26], and screws [25] from the bracket on the lower torsion link.

(b) Remove the electrical conduit [29] from the bracket on the lower torsion link.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-61-020-024

(7) Remove the nuts [7, 11], washers [8, 9, 12], and screw [10] to disconnect the electrical conduit [29] from the inner cylinder.

SUBTASK 32-51-61-020-009

(8) Disconnect the electrical conduit plug from the light on the inner cylinder.

SUBTASK 32-51-61-800-001

(9) Attach the electrical conduit and box to the outer cylinder so that it is not in the way.

LOM ALL

SUBTASK 32-51-61-020-010

(10) Disconnect the upper torsion link [13] from the steering collar [5] and attach it the inner cylinder of the shock strut.

(a) Remove the pin [3], nut [2], and the washer [4] from the torsion link pin [6].

(b) Remove the torsion link pin [6] to disconnect the upper torsion link [13] from the steering collar [5].

SUBTASK 32-51-61-010-001

(11) Do this task: NLG Inner Cylinder Removal, TASK 32-21-24-000-801.

SUBTASK 32-51-61-980-001

(12) Turn the steering collar [5] far enough to permit access to the rod end of the steering actuators [47].

SUBTASK 32-51-61-020-011

(13) Remove the pin [50], nut [49], washer [48], bushings [46], anti-rotation washers [65] (not on all airplanes), and pin [45] to disconnect the rod end of the actuators [47] from the steering collar [5].

SUBTASK 32-51-61-020-012

(14) Remove the bolts [53], washers [51], and standoffs [52] that hold the two front feet of the metering valve assy to the upper and lower steering plates.

SUBTASK 32-51-61-020-013

(15) Remove the bolts [55], washers [56], and lock tab [57] from the steering collar retainer nut [58].

SUBTASK 32-51-61-800-002

(16) Hold the lower steering plate [54] in its position.

SUBTASK 32-51-61-020-014

(17) Loosen the steering collar retainer nut [58] and remove it from the outer cylinder, using spanner wrench, SPL-1901.

SUBTASK 32-51-61-800-003

(18) Hold the steering collar [5] in its position.

SUBTASK 32-51-61-010-002

(19) Remove the lower steering plate [54] from the outer cylinder.

SUBTASK 32-51-61-020-015

(20) Remove the steering collar [5] from the outer cylinder.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G53997 S0006575832_V2

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 1 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2856017 S0000670743_V1

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 2 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 3 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2856018 S0000670744_V1

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 4 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(VIEW IN THE FORWARD DIRECTION)

A-A

G41186 S0006575834_V3

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 5 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G56435 S0006575835_V2

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 6 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2856019 S0000670745_V1

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 7 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G54017 S0006575836_V2

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 8 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G54206 S0006575837_V2

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 9 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INNER CYLINDER REMOVAL

G54218 S0006575838_V2

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 10 of 13)

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Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 11 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 12 of 13)

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Nose Gear Steering Collar Installation
Figure 401/32-51-61-990-801 (Sheet 13 of 13)

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TASK 32-51-61-400-801

3. **Steering Collar Installation (Without Using Cable Clamp Assembly)**
(Figure 401)

A. **References**

Reference	Title
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
12-21-21-640-802	Nose Landing Gear Lower End Components Servicing (P/B 301)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-21-24-400-801	NLG Inner Cylinder Installation (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
32-51-31-400-802	Nose Gear Steering System Cables Installation (P/B 401)
33-45-01-960-801	Taxi Light - Lamp Replacement (P/B 201)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-1901	Spanner Wrench - Steering Collar Retainer, NLG Part #: C32040-6 Supplier: 81205 Opt Part #: C32040-1 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Steering collar	32-51-61-01A-070	LOM ALL

E. **Location Zones**

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

F. **Access Panels**

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Steering Collar Installation

NOTE: Make sure that you install the matching Steering Collar for the Steering Sleeve installed. Steering collar assembly part number 162A1404-7 can be installed with a steering sleeve assembly part number 162A1405-11 or 162A1405-15 and only steering collar assembly part number 162A1420-2 can be installed with steering sleeve assembly part number 162A1421-3.

SUBTASK 32-51-61-860-005

(1) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-61-600-001

(2) Apply a thin layer of grease, D00633 to the bushing faces and grooves on the steering collar [5].

SUBTASK 32-51-61-420-001

(3) Install the steering collar [5] on the outer cylinder.

SUBTASK 32-51-61-420-009

(4) Install the lower steering plate [54] on the outer cylinder and hold it in position.

SUBTASK 32-51-61-600-002

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(5) Apply a thin layer of Cor-Ban 27L Compound, G50237 to the threads, thread reliefs, and mating surfaces of the steering collar retainer nut [58].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

SUBTASK 32-51-61-420-002

(6) Move the steering collar retainer nut [58] up the outer cylinder and install it below the lower steering plate [54].

(a) Tighten the steering collar retainer nut [58] to 50 - 75 pound-feet (68 - 102 newton-meters), using spanner wrench, SPL-1901.

(b) If it is necessary, loosen the steering collar retainer nut [58] a minimum amount to install the lock tab [57], washers [56], and bolts [55].

SUBTASK 32-51-61-020-016

(7) Install the standoffs [52], bolts [53], and washers [51] that hold the metering valve assy to the upper and lower steering plates.

SUBTASK 32-51-61-980-002

(8) Turn the steering collar [5] far enough to permit access to the rod end of the steering actuator assembly [47] that you will install.

SUBTASK 32-51-61-420-003

(9) Install the bushings [46], anti-rotation washers [65] (not on all airplanes), pin [45], washer [48], and nut [49] to connect the rod end of the actuator assembly [47] to the steering collar [5].

NOTE: Make sure that the flange bushing is placed face-up in the direction towards the steering actuator.

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(a) Tighten the nut [49] to 50 - 58 pound-feet (68 - 79 newton-meters).

(b) If it is necessary, loosen the nut [49] to align the castellations on the nut [49] with the hole on the pin [45].

(c) Install the cotter pin [50].

SUBTASK 32-51-61-410-001

(10) Do this task:NLG Inner Cylinder Installation, TASK 32-21-24-400-801.

SUBTASK 32-51-61-420-004

(11) Connect the upper torsion link [13] to the steering collar [5]:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

1) The chrome surface on the shank of the torsion link pin [6].

2) The threads of the nut [2].

3) The faces of the washer [4].

4) The mating surfaces of the upper torsion link [13] and the steering collar [5].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(c) Put the upper torsion link [13] in its position on the steering collar [5].

(d) Put the torsion link pin [6] through the upper torsion link [13] and the steering collar [5].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to the threads and thread reliefs of the torsion link pin [6].

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(f) Install the washer [4], and the nut [2] on the torsion link pin [6].

(g) Tighten the nut [2] to 250-300 inch-pounds (28-34 newton-meters) more than the run-on torque.

(h) If it is necessary, loosen the nut [2] to the nearest castellation to align the holes for the torsion link pin [6].

(i) Install the pin [3] in the torsion link pin [6].

SUBTASK 32-51-61-020-017

(12) Connect the sensor brackets [15] to the upper torsion link [13]:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

1) The threads and thread reliefs of the bolts [16].

2) The threads of the nuts [19].

3) The faces of the washer [17], and washer [18].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(c) If a string is attached to the sensor brackets [15], and the outer cylinder, remove the string.

(d) Put the sensor bracket [15] in its position on the upper torsion link [13].

(e) Install the washer [17] on the bolts [16].

(f) Put the bolts [16] through the upper torsion link [13], and the sensor brackets [15].

(g) Install the washer [18], and the nuts [19] on the bolts [16].

(h) Tighten the nuts [19].

SUBTASK 32-51-61-020-018

(13) Connect the box assembly [1] to the upper torsion link [13]:

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> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

1) The threads and shank of the bolts [30]
2) The threads of the nuts [33].
3) The faces of the washer [31] and washer [32].

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(c) If a string is attached to the box assembly [1], and the outer cylinder, remove the string.

(d) Put the box assembly [1] in its position on the upper torsion link [13].

(e) Install the washer [31] on the bolts [30].

(f) Put the bolts [30] through the bracket for the box assembly [1] and the upper torsion link [13].

(g) Install the washer [32], and the nuts [33] on the bolts [30].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-51-61-420-005

(14) Install the clamps that hold the electrical conduit [29] to the bracket on the lower torsion link [28]:

(a) Put the electrical conduit [29] in its position on the bracket.

(b) Install the screws [25], washers [26], and nuts [27] to attach the clamps to the bracket.

SUBTASK 32-51-61-420-008

(15) Install the screw [10], washer [8], washer [9], washer [12], nut [7], and nut [11] to connect the electrical conduit [29] to the inner cylinder.

SUBTASK 32-51-61-420-007

(16) Connect the electrical conduit plug to the light on the inner cylinder.

LOM ALL

SUBTASK 32-51-61-410-015

(17) Reconnect the steering cable NWS-A/B to the steering collar. To reconnect it, do this task: Nose Gear Steering System Cables Installation, TASK 32-51-31-400-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-61-980-003

(18) Move the inner cylinder from the fully extended to the fully compressed position. Make sure the total travel is 15.50 inches (39.4 cm).

SUBTASK 32-51-61-080-002

(19) Remove these rig pins from the rig pin set, rigging pin kit, SPL-1585:

(a) Rig pin in the nose wheel steering tiller

(b) Rig pin in the rudder pedal interconnect quadrant

(c) Rig pin in the summing mechanism.

SUBTASK 32-51-61-860-006

(20) Remove the rigging pin kit, SPL-1585 from the towing lever.

SUBTASK 32-51-61-610-001

(21) Service the shock strut for the nose gear. To do this, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

SUBTASK 32-51-61-710-003

(22) Do a test on the steering system of the nose wheel. Do the following steps from this task, do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801

- General
- Prepare the Airplane for Testing
- Do the test of the Normal Steering Response
- Do the test of Nose Gear Turn Radius and Response to full Rudder pedal Input
- Put the Airplane in its Usual Condition

(a) Make sure that there is no leakage.

SUBTASK 32-51-61-410-017

(23) Close this access panel:

Number	Name/Location
113BW	Forward Nose Wheel Well Panel

(a) Do this task: Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-51-61-710-002

(24) Do a test of the taxi light on the nose gear. To do this, do this task: Taxi Light - Lamp Replacement, TASK 33-45-01-960-801

LOM ALL

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-61-580-002

(1) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-51-61-640-001

(2) Lubricate the lube fittings on the upper torsion link [13] and the steering collar [5], do this task: Nose Landing Gear Lower End Components Servicing, TASK 12-21-21-640-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-61-000-804

4. Steering Collar Removal (Using Cable Clamp Assembly)

(Figure 402)
(Figure 403)

A. References

Reference	Title
07-11-21-580-801	Lift the Airplane Nose with the Nose Jack at Jack Point D (P/B 201)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-21-24-000-801	NLG Inner Cylinder Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-1901	Spanner Wrench - Steering Collar Retainer, NLG Part #: C32040-6 Supplier: 81205 Opt Part #: C32040-1 Supplier: 81205
SPL-13966	Clamp Assy - Steering Cables, NLG Part #: C32055-1 Supplier: 81205

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Prepare for the Removal

SUBTASK 32-51-61-480-003

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-61-860-007

(2) Make sure the wheels of the nose landing gear are in the centered position.

SUBTASK 32-51-61-860-008

(3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

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SUBTASK 32-51-61-860-009

(4) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

SUBTASK 32-51-61-860-010

(5) Install the rigging pin kit, SPL-1585 through the towing lever.

NOTE: You use the NLG Towing Lever Lock Pin to hold the towing lever in the TOW position.

SUBTASK 32-51-61-480-004

(6) Install this rig pin from the rig pin set, rigging pin kit, SPL-1585:

(a) Rig pin NS4 in the summing mechanism.

SUBTASK 32-51-61-020-026

(7) Use the cable clamp, SPL-13966 to remove the tension in steering cables NWS-A and NWS-B between the trunnion and the link assembly (Figure 403).

NOTE: You may need to remove one of the slider bolts in order to install the base plate over the cables.

(a) Position the base plate against the trunnion, with steering cables positioned in the base plate grooves.

NOTE: Use the Lock-Trunnion Nut to align the base plate into position.

(b) Tighten the clamp bolts evenly between 70 in-lb (8 N·m) to 80 in-lb (9 N·m) onto the clamp plate.

(c) Turn only the tension bolt until the clamp carrier contacts the head of the slider bolts.

NOTE: Make sure you do not exceed a maximum of 0.10 in. (0.25 cm) of cable stretch.

SUBTASK 32-51-61-020-027

(8) Remove the pins [37] to disconnect the cable NWS-A/B from the steering collar [5].

E. Steering Collar Removal

(Figure 402)

SUBTASK 32-51-61-680-002

WARNING

DO NOT REMOVE THE VALVE BODY UNTIL YOU DEFLATE THE SHOCK STRUT FULLY. THE AIR PRESSURE CAN BLOW THE VALVE BODY OUT AND CAUSE INJURIES TO PERSONNEL.

(1) Deflate the shock strut for the nose gear, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

(a) Remove the valve cap from the charging valve at the top of the shock strut.

(b) Loosen the outer hexnut two turns maximum.

NOTE: The fluid from the shock strut will begin to foam as soon as the pressure drops to ambient. Deflate the shock strut slowly to prevent loss of fluid through the air valve.

SUBTASK 32-51-61-580-003

(2) Lift the nose of the airplane until the shock strut is extended about ten inches, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, TASK 07-11-21-580-801.

SUBTASK 32-51-61-020-028

(3) Disconnect the box assembly [1] from the upper torsion link [13]:

NOTE: Disconnect the box assembly [1] with the electrical conduits attached.

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(a) Remove the nuts [33], and the washers [32] from the bolts [30].

(b) Remove the bolts [30] and washers [31] from the upper torsion link [13].

SUBTASK 32-51-61-020-029

(4) Remove the clamps [23] that hold the electrical conduits [20] to the bracket [24]:

(a) Remove the screws [21] that hold the clamps [23] to the bracket [24].

(b) Remove the clamps [23], and the nut clips [22] from the bracket [24].

SUBTASK 32-51-61-020-030

(5) Disconnect the sensor brackets [15] from the upper torsion link [13]:

NOTE: Disconnect the brackets [15] with the sensors [14] and the electrical conduits [20] attached.

(a) Remove the nuts [19], and the washers [18] from the bolts [16].

(b) Remove the bolts [16] that hold the sensor brackets [15] to the upper torsion link [13].

(c) Remove the washers [17] from the bolts [16].

(d) Isolate the sensor brackets [15] from the upper torsion link [13].

1) If it is necessary, use a string to hold the sensor brackets [15] and attach the string over the top of the outer cylinder.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-51-61-020-031

(6) Disconnect the electrical conduit [29] from the bracket on the lower torsion link [28]:

(a) Remove the nuts [27], washers [26], and screws [25] from the bracket on the lower torsion link.

(b) Remove the electrical conduit [29] from the bracket on the lower torsion link.

SUBTASK 32-51-61-020-032

(7) Remove the nuts [7, 11], washers [8, 9, 12], and screw [10] to disconnect the electrical conduit [29] from the inner cylinder.

SUBTASK 32-51-61-020-033

(8) Disconnect the electrical conduit plug from the light on the inner cylinder.

SUBTASK 32-51-61-800-004

(9) Attach the electrical conduit and box to the outer cylinder so that it is not in the way.

LOM ALL

SUBTASK 32-51-61-020-034

(10) Disconnect the upper torsion link [13] from the steering collar [5] and attach it the inner cylinder of the shock strut.

(a) Remove the pin [3], nut [2], and the washer [4] from the torsion link pin [6].

(b) Remove the torsion link pin [6] to disconnect the upper torsion link [13] from the steering collar [5].

SUBTASK 32-51-61-010-012

(11) Do this task: NLG Inner Cylinder Removal, TASK 32-21-24-000-801.

SUBTASK 32-51-61-980-004

(12) Turn the steering collar [5] far enough to permit access to the rod end of the steering actuators [47].

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SUBTASK 32-51-61-020-035

(13) Remove the pin [50], nut [49], washer [48], bushings [46], anti-rotation washers [65] (not on all airplanes), and pin [45] to disconnect the rod end of the actuators [47] from the steering collar [5].

SUBTASK 32-51-61-020-036

(14) Remove the bolts [53], washers [51], and standoffs [52] that hold the two front feet of the metering valve assy to the upper and lower steering plates.

SUBTASK 32-51-61-020-037

(15) Remove the bolts [55], washers [56], and lock tab [57] from the steering collar retainer nut [58].

SUBTASK 32-51-61-800-005

(16) Hold the lower steering plate [54] in its position.

SUBTASK 32-51-61-020-038

(17) Loosen the steering collar retainer nut [58] and remove it from the outer cylinder, using spanner wrench, SPL-1901.

SUBTASK 32-51-61-800-006

(18) Hold the steering collar [5] in its position.

SUBTASK 32-51-61-010-013

(19) Remove the lower steering plate [54] from the outer cylinder.

SUBTASK 32-51-61-020-039

(20) Remove the steering collar [5] from the outer cylinder.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2244984 S0000502794_V2

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 1 of 13)

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2856020 S0000670746_V1

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 2 of 13)

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Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 3 of 13)

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2856021 S0000670747_V1

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 4 of 13)

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(VIEW IN THE FORWARD DIRECTION)

A-A

(NOT USED)

D

2244983 S0000502799_V2

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 5 of 13)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G56435 S0006575835_V2

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 6 of 13)

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2856022 S0000670748_V1

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 7 of 13)

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G54017 S0006575836_V2

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 8 of 13)

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G54206 S0006575837_V2

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 9 of 13)

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INNER CYLINDER REMOVAL

G54218 S0006575838_V2

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 10 of 13)

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G54029 S0006575839_V2

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 11 of 13)

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G54038 S0006575840_V2

Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 12 of 13)

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Nose Gear Steering Collar Installation
Figure 402/32-51-61-990-803 (Sheet 13 of 13)

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2240737 S0000501185_V2

Steering Cables Clamp Assembly
Figure 403/32-51-61-990-804

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TASK 32-51-61-400-802

5. **Steering Collar Installation (Using Cable Clamp Assembly)**

(Figure 402)

(Figure 403)

A. **References**

Reference	Title
07-11-21-580-802	Lower the Airplane Nose Off of the Jack (P/B 201)
12-15-41-610-802	Nose Landing Gear Shock Strut Servicing, Airplane on the Ground (P/B 301)
12-21-21-640-802	Nose Landing Gear Lower End Components Servicing (P/B 301)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-21-24-400-801	NLG Inner Cylinder Installation (P/B 401)
32-51-00-700-801	Nose Wheel Steering System Test (P/B 501)
32-51-31-400-802	Nose Gear Steering System Cables Installation (P/B 401)
33-45-01-960-801	Taxi Light - Lamp Replacement (P/B 201)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-1901	Spanner Wrench - Steering Collar Retainer, NLG Part #: C32040-6 Supplier: 81205 Opt Part #: C32040-1 Supplier: 81205
SPL-13966	Clamp Assy - Steering Cables, NLG Part #: C32055-1 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Steering collar	32-51-61-01A-070	LOM ALL

E. **Location Zones**

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

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F. Steering Collar Installation

NOTE: Make sure that you install the matching Steering Collar for the Steering Sleeve installed. Steering collar assembly part number 162A1404-7 can be installed with a steering sleeve assembly part number 162A1405-11 or 162A1405-15 and only steering collar assembly part number 162A1420-2 can be installed with steering sleeve assembly part number 162A1421-3.

SUBTASK 32-51-61-860-011

(1) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-51-61-600-003

(2) Apply a thin layer of grease, D00633 to the bushing faces and grooves on the steering collar [5].

SUBTASK 32-51-61-420-010

(3) Install the steering collar [5] on the outer cylinder.

SUBTASK 32-51-61-420-011

(4) Install the lower steering plate [54] on the outer cylinder and hold it in position.

SUBTASK 32-51-61-600-004

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(5) Apply a thin layer of Cor-Ban 27L Compound, G50237 to the threads, thread reliefs, and mating surfaces of the steering collar retainer nut [58].

NOTE: IfCor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

SUBTASK 32-51-61-420-012

(6) Move the steering collar retainer nut [58] up the outer cylinder and install it below the lower steering plate [54].

(a) Tighten the steering collar retainer nut [58] 50 ft-lb (68 N·m) to 75 ft-lb (102 N·m), using spanner wrench, SPL-1901.

(b) If it is necessary, loosen the steering collar retainer nut [58] a minimum amount to install the lock tab [57], washer [56], and bolts [55].

SUBTASK 32-51-61-020-040

(7) Install the standoffs [52], bolts [53], and washers [51] that hold the metering valve assy to the upper and lower steering plates.

SUBTASK 32-51-61-980-005

(8) Turn the steering collar [5] far enough to permit access to the rod end of the steering actuator assembly [47] that you will install.

SUBTASK 32-51-61-420-013

(9) Install the bushings [46], anti-rotation washers [65](not on all airplanes), pin [45], washer [48], and nut [49] to connect the rod end of the actuator assembly [47] to the steering collar [5].

NOTE: Make sure that the flange bushing is placed face-up in the direction towards the steering actuator.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Tighten the nut [49] 50 ft-lb (68 N·m) to 58 ft-lb (79 N·m).

(b) If it is necessary, loosen the nut [49] to align the castellations on the nut [49] with the hole on the pin [45].

(c) Install the cotter pin [50].

SUBTASK 32-51-61-410-018

(10) Do this task:NLG Inner Cylinder Installation, TASK 32-21-24-400-801.

SUBTASK 32-51-61-420-014

(11) Connect the upper torsion link [13] to the steering collar [5]:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

1) The chrome surface on the shank of the torsion link pin [6].

2) The threads of the nut [2].

3) The faces of the washer [4].

4) The mating surfaces of the upper torsion link [13] and the steering collar [5].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(c) Put the upper torsion link [13] in its position on the steering collar [5].

(d) Put the torsion link pin [6] through the upper torsion link [13] and the steering collar [5].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(e) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to the threads and thread reliefs of the torsion link pin [6].

NOTE: IfCor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

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(f) Install the washer [4], and the nut [2] on the torsion link pin [6].

(g) Tighten the nut [2] to 250 - 300 inch-pounds (28 - 34 newton-meters) more than the run-on torque.

(h) If it is necessary, loosen the nut [2] to the nearest castellation to align the holes for the torsion link pin [6].

(i) Install the pin [3] in the torsion link pin [6].

SUBTASK 32-51-61-020-041

(12) Connect the sensor brackets [15] to the upper torsion link [13]:

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

1) The threads and thread reliefs of the bolts [16].

2) The threads of the nuts [19].

3) The faces of the washers [17], and washers [18].

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(c) If a string is attached to the sensor brackets [15], and the outer cylinder, remove the string.

(d) Put the sensor bracket [15] in its position on the upper torsion link [13].

(e) Install the washers [17] on the bolts [16].

(f) Put the bolts [16] through the upper torsion link [13], and the sensor brackets [15].

(g) Install the washers [18], and the nuts [19] on the bolts [16].

(h) Tighten the nuts [19].

SUBTASK 32-51-61-020-042

(13) Connect the box assembly [1] to the upper torsion link [13]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237, to these items:

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

1) The threads and shank of the bolts [30].
2) The threads of the nuts [33].
3) The faces of the washers [31] and washers [32].

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Remove all unwanted corrosion preventive Cor-Ban 27L Compound, G50237.

NOTE: If Cor-Ban 27L Compound, G50237 is not available, you can use corrosion inhibiting material, G50136 as an approved alternate.

(c) If a string is attached to the box assembly [1], and the outer cylinder, remove the string.

(d) Put the box assembly [1] in its position on the upper torsion link [13].

(e) Install the washers [31] on the bolts [30].

(f) Put the bolts [30] through the bracket for the box assembly [1] and the upper torsion link [13].

(g) Install the washers [32], and the nuts [33] on the bolts [30].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-51-61-420-015

(14) Install the clamps that hold the electrical conduit [29] to the bracket on the lower torsion link [28]:

(a) Put the electrical conduit [29] in its position on the bracket.

(b) Install the screws [25], washers [26], and nuts [27] to attach the clamps to the bracket.

SUBTASK 32-51-61-010-014

(15) Install the screws [10], washer [8],washer [9], washer [12], nut [7] and nut [11] to connect the electrical conduit [29] to the inner cylinder.

SUBTASK 32-51-61-420-016

(16) Connect the electrical conduit plug to the light on the inner cylinder.

LOM ALL

SUBTASK 32-51-61-410-019

(17) Reconnect the steering cable NWS-A/B to the steering collar. To reconnect it, do this task: Nose Gear Steering System Cables Installation, TASK 32-51-31-400-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-51-61-080-001

(18) Remove the cable clamp, SPL-13966.

SUBTASK 32-51-61-980-006

(19) Move the inner cylinder from the fully extended to the fully compressed position. Make sure the total travel is 15.50 inches (39.4 cm).

SUBTASK 32-51-61-080-003

(20) Remove rip pin NS4 from the summing mechanism.

SUBTASK 32-51-61-860-012

(21) Remove the rigging pin kit, SPL-1585 from the towing lever.

SUBTASK 32-51-61-610-002

(22) Service the shock strut for the nose gear. To do this, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, TASK 12-15-41-610-802.

SUBTASK 32-51-61-710-004

(23) Do a test on the steering system of the nose wheel. Do the following steps from this task, do this task: Nose Wheel Steering System Test, TASK 32-51-00-700-801.

- General
- Prepare the Airplane for Testing
- Do the test of the Normal Steering Response
- Do the test of Nose Gear Turn Radius and Response to full Rudder pedal Input
- Put the Airplane in its Usual Condition

(a) Make sure that there is no leakage.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-461

SUBTASK 32-51-61-710-005

(24) Do a test of the taxi light on the nose gear. To do this, do this task: Taxi Light - Lamp Replacement, TASK 33-45-01-960-801.

LOM ALL

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-61-580-004

(1) Do this task: Lower the Airplane Nose Off of the Jack, TASK 07-11-21-580-802.

SUBTASK 32-51-61-640-002

(2) Lubricate the lube fittings on the upper torsion link [13] and the steering collar [5], do this task: Nose Landing Gear Lower End Components Servicing, TASK 12-21-21-640-802.

END OF TASK

TASK 32-51-61-000-802

6. Upper Steering Sleeve Removal

(Figure 401)

A. References

Reference	Title
32-51-11-000-801	Steering Metering Valve Removal (Without Using Cable Clamp Assembly) (P/B 401)

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(Continued)

Reference	Title
32-51-11-000-803	Steering Metering Valve Removal (Using Cable Clamp Assembly) (P/B 401)
32-51-51-000-801	Nose Gear Steering Actuator Removal (P/B 401)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-51-61-010-003

(1) Remove the Steering Metering Valve. To remove it, do this task: Steering Metering Valve Removal (Without Using Cable Clamp Assembly), TASK 32-51-11-000-801 or Steering Metering Valve Removal (Using Cable Clamp Assembly), TASK 32-51-11-000-803.

SUBTASK 32-51-61-010-004

(2) Remove both steering actuators [47] from the upper steering sleeve. To remove them, do this task: Nose Gear Steering Actuator Removal, TASK 32-51-51-000-801

SUBTASK 32-51-61-010-005

(3) Remove the Steering Collar [5]. To remove it, do this task: Steering Collar Removal (Without Using Cable Clamp Assembly), TASK 32-51-61-000-801 or Steering Collar Removal (Using Cable Clamp Assembly), TASK 32-51-61-000-804.

D. Upper Steering Sleeve Removal

(Figure 401)

SUBTASK 32-51-61-010-006

(1) Scrape carefully, to remove the fillet seal of sealant from the Upper steering sleeve [59] and the outer cylinder [60].

SUBTASK 32-51-61-010-007

(2) Remove the pins [61], nuts [62], washers [63] and bolts [64] from the upper steering sleeve [59] and outer cylinder [60].

NOTE: You may have to remove sealant from the cotter pins, nuts and attachment pin threads to remove the attachment bolts.

SUBTASK 32-51-61-010-008

(3) Remove, by lowering, the upper steering sleeve [59] from the outer cylinder [60].

SUBTASK 32-51-61-010-009

(4) Remove any remaining sealant or grease from the upper steering sleeve [59] and from the outer cylinder [60].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-61-400-803

7. Upper Steering Sleeve Installation

(Figure 401)

A. References

Reference	Title
32-51-11-400-801	Steering Metering Valve Installation (Without Using Cable Clamp Assembly) (P/B 401)
32-51-11-400-802	Steering Metering Valve Installation (Using Cable Clamp Assembly) (P/B 401)
32-51-51-400-801	Nose Gear Steering Actuator Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
A00226	Compound - Tamper-Proof Putty	BMS8-45
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
C50075	Coating - Protective Enamel (BAC 707 Gray Color)	BMS10-60 Type II
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00633	Grease - Aircraft General Purpose	BMS3-33
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

D. Upper Steering Sleeve Installation

SUBTASK 32-51-61-410-002

(1) Apply grease, D00633 (preferred) or grease, D00013 (optional for 162A1100-4 thru -9) to the chrome-plated (lube fitting) part of the outer cylinder [60].

SUBTASK 32-51-61-410-004

(2) Install the upper steering sleeve [59] on the outer cylinder [60] until the bushings of the sleeve and cylinder align.

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SUBTASK 32-51-61-410-020

WARNING	DO NOT GET THE CORROSION-INHIBITING COMPOUND ON YOUR SKIN, IN YOUR EYES, OR ON YOUR CLOTHES. THE COMPOUND IS POISONOUS AND FLAMMABLE. USE APPROVED GLOVES, AND EYE PROTECTION. MAKE SURE THAT THERE IS GOOD AIRFLOW IN THE WORK AREA. KEEP THE COMPOUND AWAY FROM SPARKS AND FLAMES. THE COMPOUND CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) Apply a thin layer of corrosion inhibiting material, G50136 or Cor-Ban 27L Compound, G50237 (162A1100-4 thru -9 only) to the shanks, thread reliefs, and threads of bolts [64] and faces of washers [63].

(a) Remove all unwanted corrosion inhibiting compound.

SUBTASK 32-51-61-410-005

(4) Install the bolts [64], washers [63] and nuts [62] through the upper steering sleeve [59] into the outer cylinder [60].

SUBTASK 32-51-61-410-006

(5) Tighten the nuts [62] to 160 in-lb (18 N·m) to 190 in-lb (21 N·m) above the run-on torque. If necessary, loosen each nut to the nearest castellation to align the holes of the cotter pins [61].

SUBTASK 32-51-61-410-007

(6) Install the cotter pins [61] and apply compound, A00226 to fully cover the nuts [62], washers [63] and cotter pins [61]. Apply the compound for protection if tampered, it causes the seal to break.

SUBTASK 32-51-61-410-008

(7) Fill the space between the outer cylinder [60] and upper steering sleeve [59] with sealant, A00247.

(a) Fillet seal around the outer cylinder [60] and upper steering sleeve [59].

(b) Apply coating, C50075 to the sealant and the area around the sealant.

SUBTASK 32-51-61-410-012

(8) Apply a capseal of sealant, A02315 or sealant, A00247 to the bolts [64], washers [63], nuts [62], and cotter pins [61] such that the entire end of the assembly, above the flange, is covered with sealant.

NOTE: The purpose of the sealant is to prevent the adjacent conduit from catching on the attachment bolt assembly during nose gear steering activities.

(a) Form the sealant as flat and smooth as possible to allow the conduit to easily pass over the bolt assembly.

(b) No bumps, ridges or sharp edges greater than 0.50 inches (12.7 mm) are allowed.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 32-51-61-410-011

(1) Install the Steering Collar. To install it, do this task: Steering Collar Installation (Without Using Cable Clamp Assembly), TASK 32-51-61-400-801 or Steering Collar Installation (Using Cable Clamp Assembly), TASK 32-51-61-400-802.

SUBTASK 32-51-61-010-010

(2) Install both steering actuator assemblies [47] to the upper steering sleeve. To install them, do this task: Nose Gear Steering Actuator Installation, TASK 32-51-51-400-801

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SUBTASK 32-51-61-410-014

(3) Install the Steering Metering Valve. To install it, do this task: Steering Metering Valve Installation (Without Using Cable Clamp Assembly), TASK 32-51-11-400-801 or Steering Metering Valve Installation (Using Cable Clamp Assembly), TASK 32-51-11-400-802.

END OF TASK

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STEERING COLLAR - INSPECTION/CHECK

1. General

A. This task has the data for a dimensional inspection of the steering collar. The intent of this section is to provide dimensional wear data in the event you have the components disassembled. There are no procedures for access, removal, or installation of the components. Refer to STEERING COLLAR - REMOVAL/INSTALLATION, PAGEBLOCK 32-51-61/401 Steering Collar - Removal/Installation for procedures to do these tasks.

B. Wear of the steering collar beyond limits can sometimes result in nose wheel vibration. If you are inspecting because of nose wheel vibration, you should first go perform the troubleshooting section of the 737-678 Fault Isolation Manual, ATA 32-51 TASK 804. This will ensure that the vibration experienced is not the result of other causes.

TASK 32-51-61-220-801

2. Steering Collar Inspection

(Figure 601)

A. References

Reference	Title
32-51-51-400-801	Nose Gear Steering Actuator Installation (P/B 401)
32-51-61-400-801	Steering Collar Installation (Without Using Cable Clamp Assembly) (P/B 401)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Procedure

SUBTASK 32-51-61-200-001

(1) Inspect for the axial (vertical) clearance between the steering collar bushing lower flange and the lower steering plate (inspection item [2]):

NOTE: Disassembly is not required to do this part of the steering collar inspection.

(a) Raise the steering collar, to the extent possible, against the upper steering plate lower surface.

(b) Use a non-marring device (wood or plastic) to pry UP between the Lower Steering Plate and the lower lug of the Steering Collar Assembly, in the location show in Figure 601.

NOTE: The intent is to lift and tilt the Steering Collar Assembly to measure the combined diametric and axial wear.

(c) Use a feeler gage to measure the clearance at the location shown in Figure 601.

SUBTASK 32-51-61-020-025

(2) If the clearance dimension exceeds the maximum permitted axial clearance dimension in inspection item [2], disassemble the components and replace or repair the parts not in tolerance with the dimensions in (Table 601).

(3) If there are no reports of nose wheel vibration, disassembly, part repair or replacement can be accomplished at a maintenance visit when manpower and parts are available.

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SUBTASK 32-51-61-840-001

(4) Put the airplane back to usual condition:

(a) Install the steering actuator for the nose landing gear if it was removed.

1) Do this task: Nose Gear Steering Actuator Installation, TASK 32-51-51-400-801.

(b) To install the steering collar for the nose landing gear if it was removed.

1) Do this task: Steering Collar Installation (Without Using Cable Clamp Assembly), TASK 32-51-61-400-801.

SUBTASK 32-51-61-020-022

(5) Use the table below to see the wear limits.

Table 601/32-51-61-993-803

NAME OF THE PARTS THAT ARE IN CONTACT	DIM.	DIAMETER DESIGN LIMITS		WEAR LIMITS	
		MINIMUM inches/mm	MAXIMUM inches/mm	PERMITTED MAXIMUM I.D./ MINIMUM O.D. OF WORN PART	MAXIMUM SERVICE DIAMETRIC CLEARANCE
#1 STEERING COLLAR BEARING	I.D.	6.6175 in 168.08 mm	6.6190 in 168.12 mm	6.6500 in 168.91 mm	0.035 in 0.889 mm
#1 UPPER STEERING PLATE SLEEVE	O.D.	6.6148 in 168.02 mm	6.6160 in 168.05 mm	6.6100 in 167.89 mm	
#2 STEERING COLLAR BUSHING FLANGE		N/A	N/A	N/A	0.070 in 01.778mm (AXIAL) (CLEARANCE)
#2 LOWER STEERING PLATE		N/A	N/A	N/A	
#3 BUSHING	I.D.	0.9995 in 25.387 mm	1.0005 in 25.413 mm	1.0030 in 25.476 mm*[1]	0.002 in 0.051 mm
#3 PIN	O.D.	0.9980 in 25.349 mm	0.9990 in 25.375 mm	0.9965 in 25.311 mm	
#4 COLLAR	I.D.	1.1875 in 30.162 mm	1.1886 in 30.190 mm	1.1920 in 30.277 mm	0.003 in 0.076 mm
#4 BUSHING	O.D.	1.1860 in 30.124 mm	1.1870 in 30.150 mm	1.1836 in 30.063 mm	
#5 BUSHING	I.D.	1.2500 in 31.750 mm	1.2512 in 31.780 mm	1.2545 in 31.864 mm	0.003 in 0.076 mm
#5 PIN	O.D.	1.2485 in 31.712 mm	1.2495 in 31.737 mm	1.2462 in 31.653 mm	

ECCN 9E991 BOEING PROPRIETARY - See title page for details

*[1]

Wear through the KARON coating is acceptable if not mechanically worn beyond limits shown above.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G66731 S0006575849_V4

Steering Collar Wear Limits
Figure 601/32-51-61-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

C-C

1 LIFT AND TILT AT THIS APPROXIMATE LOCATION ON EITHER SIDE, BETWEEN THE STEERING COLLAR LOWER LUG AND THE LOWER STEERING PLATE.

2 MEASURE THE VERTICAL (AXIAL) CLEARANCE, BETWEEN THE BUSHING FLANGE AND THE LOWER STEERING PLATE, AT THIS APPROXIMATE LOCATION ON EITHER SIDE OF THE COLLAR.

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Steering Collar Wear Limits
Figure 601/32-51-61-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER PEDAL STEERING ROTARY ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the rotary actuator (referred to as the actuator instl [3]) for the rudder pedal steering

(2) An installation of the rotary actuator for the rudder pedal steering.

TASK 32-51-81-000-801

2. Rudder Pedal Steering Rotary Actuator Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
117	Electrical and Electronics Compartment - Left

D. Access Panels

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

E. Prepare for the Removal

SUBTASK 32-51-81-480-001

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON THE NOSE AND MAIN LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed on the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-51-81-480-002

(2) Make sure the tires of landing gear have chocks installed around them (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-51-81-010-001

(3) Remove the forward access panel from the nose wheel well to get access to the turnbuckles of cables NGPP-A and NGPP-B, and the actuator instl [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Open this access panel:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

SUBTASK 32-51-81-860-002

(4) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

F. Rudder Pedal Steering Rotary Actuator Removal

SUBTASK 32-51-81-020-001

(1) Disconnect the cables NGPP-A and NGPP-B:

(a) Remove the locking clips from the turnbuckles of cables NGPP-A and NGPP-B.

(b) Loosen the tension at the turnbuckles of cables NGPP-A and NGPP-B.

(c) Remove the pins [4] that hold the ends of cables NGPP-A and NGPP-B on each side of the pulley of the actuator instl [3].

(d) Remove the cables NGPP-A and NGPP-B from the pulley of the actuator instl [3].

SUBTASK 32-51-81-480-003

(2) Install the following rig pins:

(a) rig pin NS1, from rigging pin kit, SPL-1585 in the interconnect quadrant [2]

(b) Rig pin NS5 in the interconnect eccentric drum [1]. Do the following steps:

1) Turn the eccentric drum by hand.

2) Make sure the interconnect eccentric drum rig pin hole and bracket rig pin slot line up.

3) Install rig pin NS5.

SUBTASK 32-51-81-020-002

(3) Disconnect the electrical connector [5] from the top of the actuator instl [3].

SUBTASK 32-51-81-020-003

(4) Remove the actuator instl [3]:

(a) Remove the bolts [6], and the washers [7] that hold the actuator instl [3] to the support bracket.

(b) Remove the washers [7] from the bolts [6].

(c) Remove the actuator instl [3] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL

A

F83319 S0006575854_V2

Rudder Pedal Steering Rotary Actuator Installation
Figure 401/32-51-81-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F83339 S0006575855_V2

Rudder Pedal Steering Rotary Actuator Installation
Figure 401/32-51-81-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1 **CAUTION:**

MAKE SURE THE ENDS OF THE PINS [4] DO NOT TOUCH THE HOUSING OF THE ACTUATOR [3] IF THE PINS [4] TOUCH THE HOUSING, DAMAGE TO EQUIPMENT CAN OCCUR.

F83344 S0006575856_V2

Rudder Pedal Steering Rotary Actuator Installation
Figure 401/32-51-81-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-51-81-400-801

3. Rudder Pedal Steering Rotary Actuator Installation

(Figure 401)

A. References

Reference	Title
05-51-91-790-801	Cabin Pressure Leak Test (P/B 201)
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
32-51-00-820-801	Rudder Pedal Interconnect Mechanism Adjustment (P/B 501)
51-21-41-370-801	Bonderite M-CR 1001 Aero Application Process (P/B 701)
53-14-01-420-801	Nose Wheel Well Access Panels - Installation (P/B 401)
SWPM 20-60-03	Special Protection of Electrical Connectors

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Rotary actuator	32-51-81-02-005	LOM ALL
4	Pin	32-51-31-10-005	LOM 443, 444, 464-999
		32-51-31-15-005	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-442, 445-447, 450-463

E. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
117	Electrical and Electronics Compartment - Left

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Access Panels

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

G. Prepare for the Installation

SUBTASK 32-51-81-100-001

(1) Do these steps to help supply a good electrical bond between the support bracket and the rotary actuator [3]:

(a) To fully clean the mating surfaces of the support bracket and the rotary actuator [3]. To do this, do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

(b) To chemically prepare the mating surfaces of the support bracket and the rotary actuator [3] with the coating, C00064. To do this, do this task: Bonderite M-CR 1001 Aero Application Process, TASK 51-21-41-370-801.

H. Rudder Pedal Steering Rotary Actuator Installation

SUBTASK 32-51-81-420-001

(1) Install the rotary actuator [3]:

WARNING USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply a thin layer of the corrosion preventive Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to all the areas of the fastener holes in the support bracket.

(b) Put the rotary actuator [3] in its position for attachment to the support bracket.

(c) Align the holes in the rotary actuator [3] to the holes in the support bracket.

(d) Install the bolts [6] and washers [7] that attach the rotary actuator [3] to the support bracket.

SUBTASK 32-51-81-760-001

(2) Measure the resistance between the rotary actuator [3] and the support bracket.

NOTE: The resistance value must be less than 0.0025 ohms.

SUBTASK 32-51-81-410-001

(3) Before you connect the electrical connector [5] at the top of the rotary actuator [3], examine the connector for corrosion.

WARNING DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, refer to (SWPM 20-60-03) to correct the problem.

(b) Apply the D5026NS or ZC-026 compound, G50171 to the connector (SWPM 20-60-03).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(4) Connect the electrical connector [5] at the top of the rotary actuator [3].

SUBTASK 32-51-81-410-004

(5) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	17	C01027	LANDING GEAR NOSE GEAR STEER

SUBTASK 32-51-81-860-004

(6) Put airplane into air mode (Put the Airplane in the Air Mode, TASK 32-09-00-860-801).

SUBTASK 32-51-81-210-001

(7) Make sure marks align on actuator.

SUBTASK 32-51-81-420-002

(8) Connect the cables NGPP-A and NGPP-B:

(a) Put the ends of cables NGPP-A and NGPP-B in their position for connection to the pulley of the rotary actuator [3].

CAUTION MAKE SURE THAT THE ENDS OF THE PINS DO NOT TOUCH THE HOUSING OF THE ACTUATOR INSTALLATION. IF THE PINS TOUCH THE HOUSING, DAMAGE TO EQUIPMENT CAN OCCUR.

(b) Install the pins [4] to hold the ends of the cables NGPP-A and NGPP-B on each side of the pulley of the rotary actuator [3].

SUBTASK 32-51-81-820-001

(9) Adjust the cables NGPP-A and NGPP-B. To do this, do this task: Rudder Pedal Interconnect Mechanism Adjustment, TASK 32-51-00-820-801.

SUBTASK 32-51-81-080-001

(10) Remove rig pin NS1, from rigging pin kit, SPL-1585 from the interconnect quadrant [2], and rig pin NS5, from rigging pin kit, SPL-1585 from the interconnect eccentric drum [1].

SUBTASK 32-51-81-840-001

(11) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 32-51-81-480-004

(12) Install the locking clips on the turnbuckles of cables NGPP-A and NGPP-B.

SUBTASK 32-51-81-410-002

(13) Install the forward access panel in the nose wheel well (Nose Wheel Well Access Panels - Installation, TASK 53-14-01-420-801).

Close this access panel:

Number	Name/Location
113AW	Forward Nose Wheel Well Panel

SUBTASK 32-51-81-860-003

(14) Do this task:Cabin Pressure Leak Test, TASK 05-51-91-790-801

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LANDING GEAR POSITION INDICATING AND WARNING SYSTEM - ADJUSTMENT/TEST

1. General

A. This task does a test of the position indication and warning for the landing gear. It is necessary to lift the airplane on jacks to let the landing gear retract and extend.

TASK 32-61-00-710-801

2. Landing Gear Position Indicating and Warning System - Test

(Figure 501)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-10-740-801	Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test (P/B 501)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Prepare for the Test

SUBTASK 32-61-00-860-024

(1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-61-00-860-002

(2) Make sure that the hydraulic systems A and B are not pressurized. If the hydraulic system is pressurized, then do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-61-00-580-003

(3) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, then do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-00-840-002

> **WARNING** OBEY THE PROCEDURE THAT PREPARES TO PUT THE AIRPLANE IN THE AIR MODE. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-61-00-580-001

(5) Do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-61-00-860-020

> **WARNING** MAKE SURE THAT THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM IS OPEN BEFORE YOU MOVE THE THRUST LEVERS. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE WEATHER RADAR SYSTEM. THE OPERATION CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(6) Move the engine thrust levers to the full forward position.

NOTE: You will keep the thrust levers in this position until the tests are complete.

D. Test of the Indicator Lights

SUBTASK 32-61-00-860-004

(1) Put the landing gear control lever in the DN position.

(a) Make sure that the green landing gear indicator lights above the landing gear lever and on the overhead panel are on for each gear.

NOTE: Auxiliary landing gear position indicator lights are located on the P5 aft overhead panel.

SUBTASK 32-61-00-860-005

(2) Move the landing gear control lever to the OFF position.

(a) Make sure that the red warning lights come on and the green indicator lights stay on.

SUBTASK 32-61-00-860-006

(3) Put the LIGHTS test switch on the P1 panel in the DIM position.

(a) Make sure that the green indicator lights and red warning lights go dim.

E. Test the Nose Landing Gear and Indication

SUBTASK 32-61-00-860-007

(1) Do these steps to raise the nose landing gear:

(a) Move the landing gear lever to the DN position.

(b) Remove the downlock pin from the nose landing gear only (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

> **WARNING** MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR AREA. WHEN YOU SUPPLY THE HYDRAULIC POWER AND THE CONTROL LEVER IS IN THE UP POSITION, THE LANDING GEAR WILL RETRACT. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(c) Make sure that all persons and equipment are clear of the landing gear area.

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(d) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(e) Move the landing gear lever to the UP position.

SUBTASK 32-61-00-210-001

(2) Look at the landing gear indicator lights.

(a) Make sure that the green indicator lights for the nose landing gear go off when the lock braces unlock.

(b) Make sure that the red warning lights for the nose landing gear go off when the gear retracts to the up and locked position.

(c) Make sure that the green indicator lights for the main landing gear stay on.

NOTE: The green down-and-locked lights for the gears that have the downlock pins installed may remain illuminated or may extinguish depending on rigging and tolerances.

(d) Make sure that the red warning lights for the main landing gear go on.

SUBTASK 32-61-00-860-008

(3) Lower the nose landing gear.

WARNING	MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR AREA. WHEN YOU SUPPLY THE HYDRAULIC POWER AND THE CONTROL LEVER IS IN THE DN POSITION, THE LANDING GEAR WILL EXTEND. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure that all persons and equipment are clear of the landing gear area.

(b) Move the landing gear lever to the DN position

SUBTASK 32-61-00-580-004

(4) Install the downlock pin on the nose landing gear (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

F. Test the Left Main Landing Gear and Indication

SUBTASK 32-61-00-860-009

(1) Do these steps to raise the left main landing gear:

(a) Remove the downlock pin from the left main landing gear (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

WARNING	MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR AREA. WHEN YOU SUPPLY THE HYDRAULIC POWER AND THE CONTROL LEVER IS IN THE UP POSITION, THE LANDING GEAR WILL RETRACT. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(b) Make sure that all persons and equipment are clear of the landing gear area.

(c) Move the landing gear lever to the UP position.

SUBTASK 32-61-00-210-002

(2) Look at the landing gear indicator lights.

(a) Make sure that the green indicator lights for the left main landing gear go off when the lock braces unlock.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Make sure that the red warning lights for the left main landing gear go off when the gears retract to the up and locked position.

(c) Make sure that the green indicator lights for the nose and right main landing gear stay on.

NOTE: The green down-and-locked lights for the gears that have the downlock pins installed may remain illuminated or may extinguish depending on rigging and tolerances.

(d) Make sure that the red warning lights for the nose and right main landing gear go on.

SUBTASK 32-61-00-860-010

(3) Lower the left main landing gear.

WARNING	MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR AREA. WHEN YOU SUPPLY THE HYDRAULIC POWER AND THE CONTROL LEVER IS IN THE DN POSITION, THE LANDING GEAR WILL EXTEND. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure that all persons and equipment are clear of the landing gear area.

(b) Move the landing gear lever to the DN position.

SUBTASK 32-61-00-580-005

(4) Install the downlock pin on the left main landing gear (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

G. Test the Right Main Landing Gear and Indication

SUBTASK 32-61-00-860-018

(1) Do these steps to raise the right main landing gear:

(a) Remove the downlock pin from the right main landing gear (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

WARNING	MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR AREA. WHEN YOU SUPPLY THE HYDRAULIC POWER AND THE CONTROL LEVER IS IN THE UP POSITION, THE LANDING GEAR WILL RETRACT. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(b) Make sure that all persons and equipment are clear of the landing gear area.

(c) Move the landing gear lever to the UP position

SUBTASK 32-61-00-210-004

(2) Look at the landing gear indicator lights.

(a) Make sure that the green indicator lights for the right main landing gear go off when the lock braces unlock.

(b) Make sure that the red warning lights for the right main landing gear go off when the gears retract to the up and locked position.

(c) Make sure that the green indicator lights for the nose and left main landing gear stay on.

NOTE: The green down-and-locked lights for the gears that have the downlock pins installed may remain illuminated or may extinguish depending on rigging and tolerances.

(d) Make sure that the red warning lights for the nose and left main landing gear go on.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-00-860-019

(3) Lower the right main landing gear.

> **WARNING** MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR AREA. WHEN YOU SUPPLY THE HYDRAULIC POWER AND THE CONTROL LEVER IS IN THE DN POSITION, THE LANDING GEAR WILL EXTEND. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure that all persons and equipment are clear of the landing gear area.

(b) Move the landing gear lever to the DN position.

SUBTASK 32-61-00-580-006

(4) Install the downlock pin on the right main landing gear (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

H. Test All the Landing Gear and Indication

SUBTASK 32-61-00-860-011

(1) Do these steps to raise all the landing gear:

(a) Remove the downlock pins from the landing gear (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

> **WARNING** MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR AREA. WHEN YOU SUPPLY THE HYDRAULIC POWER AND THE CONTROL LEVER IS IN THE UP POSITION, THE LANDING GEAR WILL RETRACT. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(b) Make sure that all persons and equipment are clear of the landing gear area.

(c) Move the landing gear lever to the UP position.

SUBTASK 32-61-00-210-003

(2) Look at the landing gear indicator lights.

(a) Make sure that all the green indicator lights for the landing gear go off when the lock braces unlock.

(b) Make sure that the red warning lights for all the landing gear go off when the gears retract to the up and locked position.

SUBTASK 32-61-00-730-001

(3) Put the LIGHTS test switch, on panel P1, in the TEST position.

(a) Make sure that the green and red lights for the landing gear come on.

SUBTASK 32-61-00-730-002

(4) Release the LIGHTS test switch.

(a) Make sure that the green and red lights for the landing gear go off.

SUBTASK 32-61-00-860-012

(5) Move the landing gear control lever to the OFF position.

(a) Make sure that the red warning lights for the landing gear stay off.

SUBTASK 32-61-00-860-013

(6) Lower the landing gear.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE LANDING GEAR AREA. WHEN YOU SUPPLY THE HYDRAULIC POWER AND THE CONTROL LEVER IS IN THE DN POSITION, THE LANDING GEAR WILL EXTEND. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure that all persons and equipment are clear of the landing gear area.

(b) Move the control lever for the landing gear to the DN position.

(c) Make sure that all three red warning lights above the gear lever come on while the gear moves to the down position.

(d) Look for these indications when the landing gear goes to the down and locked position:

1) Make sure that the red warning lights go off.

2) Make sure that the green indicator lights above the gear lever and overhead on the P5 panel come on.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 32-61-00-860-023

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

SUBTASK 32-61-00-860-014

WARNING INSTALL GROUND LOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(2) Install the ground lock pins (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

SUBTASK 32-61-00-860-015

(3) If hydraulic power is no longer necessary, then do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-61-00-860-021

(4) Move the engine thrust levers to the idle position.

SUBTASK 32-61-00-860-016

(5) Do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-61-00-740-003

(6) Check the Proximity Switch Electronic Unit (PSEU) for stored faults using the self test, do this task: Proximity Switch Electronics Unit (PSEU) BITE Test - Ground Test, TASK 32-09-10-740-801.

SUBTASK 32-61-00-860-022

(7) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

F96976 S0006575862_V3

Landing Gear Position Indicating and Warning Test
Figure 501/32-61-00-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR UPLOCK SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the main landing gear uplock sensor.

(2) Installation of the main landing gear uplock sensor.

B. The procedures for the left and right installations are similar.

TASK 32-61-21-020-801

2. Main Landing Gear Uplock Sensor Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
SWPM 20-30-12	Assembly of Splices

B. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

C. Prepare for the Removal

SUBTASK 32-61-21-480-001

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear.

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-21-480-002

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-61-21-840-004

> **WARNING**
> OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-21-860-001

(4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Main Landing Gear Uplock Sensor Removal

SUBTASK 32-61-21-020-001

(1) Remove the sensor wires including the splices, refer to SWPM 20-30-12.

SUBTASK 32-61-21-020-002

(2) Do these steps to remove the sensor [5]:

(a) Remove the nuts [4], washers [3], bolts [1] and washers [2] that secure the sensor [5] to the mounting bracket.

(b) Remove the sensor [5] from the mounting bracket.

SUBTASK 32-61-21-210-001

(3) Examine the sensor [5] and adjacent areas for signs of damage.

NOTE: Damage to the sensor may be an indication of an incorrect clearance between the sensor and the target.

(a) If you find damage, make a note of the damage for the installation procedure.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE IS SHOWN, RIGHT SIDE IS EQUIVALENT)

F63876 S0006575866_V2

Main Landing Gear Up-and-Locked Sensor Installation
Figure 401/32-61-21-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR UPLOCK
(RIGHT MAIN LANDING GEAR UPLOCK IS EQUIVALENT)

UP-AND-LOCKED SENSORS

A-A

1

ITEM	SENSOR NO	MLG	LOCATION
[5]	S0072	L	FWD
[5]	S0074	R	FWD
[5]	S1016	L	AFT
[5]	S1017	R	AFT

F64419 S0006575867_V4

Main Landing Gear Up-and-Locked Sensor Installation
Figure 401/32-61-21-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR UPLOCK
(RIGHT MAIN LANDING GEAR UPLOCK IS EQUIVALENT)

UP-AND-LOCKED SENSORS
A-A

1

ITEM	SENSOR NO.	MLG	LOCATION
[5]	S0072	L	FWD
[5]	S0074	R	FWD
[5]	S1016	L	AFT
[5]	S1017	R	AFT

1936980 S0000367525_V4

Main Landing Gear Up-and-Locked Sensor Installation
Figure 401/32-61-21-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-61-21-400-801

3. Main Landing Gear Uplock Sensor Installation

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-61-21-400-802	Main Landing Gear Uplock Sensor Clearance Measurement (Airplane on Jacks) (P/B 501)
32-61-21-400-803	Main Landing Gear Uplock Sensor Clearance Measurement (Airplane not on Jacks) (P/B 501)
32-61-21-710-801	Main Landing Gear Up-and-Locked Sensor Operational Test (P/B 501)
SWPM 20-30-12	Assembly of Splices

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Sensor	32-61-21-01-055	LOM ALL

D. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

E. Prepare for the Installation

SUBTASK 32-61-21-480-003

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-21-480-004

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-21-840-005

> **WARNING** OBEY THE PROCEDURE THAT PREPARES TO PUT THE AIRPLANE IN THE AIR MODE. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) If the airplane systems are not prepared for air mode simulation, do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-61-21-860-002

(4) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

F. Main Landing Gear Uplock Sensor Installation

SUBTASK 32-61-21-410-001

(1) Fay seal the bottom of the sensor with sealant, A00247.

SUBTASK 32-61-21-420-003

(2) Install the sensor [5]:

(a) Position the sensor [5] on the bracket.

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to thread reliefs, threads, and washer faces before the assemble.

(c) Install the bolts [1], washers [2], washers [3], and nuts [4].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

NOTE: Use CRES washers below nuts with titanium sensors. Use cad-plated washers below bolt heads. CRES washers are optional below nuts with stainless steel sensors.

LOM ALL

SUBTASK 32-61-21-420-002

(3) Connect the sensor leads to the airplane:

(a) If it is necessary, cut the sensor leads to the correct length.

(b) Connect the leads with splices, refer to SWPM 20-30-12.

SUBTASK 32-61-21-960-001

(4) If you found damage to the sensor [5] or the adjacent area during the removal procedure, do these steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Repair or replace all damaged components or areas.

NOTE: Damage to the sensor, the target, or the adjacent areas may be an indication of an incorrect sensor clearance.

(b) Measure the sensor [5] clearance.

- When airplane is not on jacks, do this task: Main Landing Gear Uplock Sensor Clearance Measurement (Airplane not on Jacks), TASK 32-61-21-400-803.
- When airplane is on jacks, do this task: Main Landing Gear Uplock Sensor Clearance Measurement (Airplane on Jacks), TASK 32-61-21-400-802

G. Main Landing Gear Uplock Sensor Installation Test

SUBTASK 32-61-21-860-033

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 32-61-21-860-034

(2) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

SUBTASK 32-61-21-740-003

(3) Do this task: Main Landing Gear Up-and-Locked Sensor Operational Test, TASK 32-61-21-710-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR UPLOCK SENSOR - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) Measurement of the main landing gear uplock sensor clearance (Airplane on Jacks).

(2) Measurement of the main landing gear uplock sensor clearance (Airplane not on Jacks).

(3) Adjustment of the main landing gear uplock sensor clearance.

(4) Operational test of the main landing gear uplock sensor.

B. The procedures for the left and right installations are similar.

TASK 32-61-21-400-802

2. Main Landing Gear Uplock Sensor Clearance Measurement (Airplane on Jacks)

(Figure 501)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
G02020	Clay, Modeling	

C. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

D. Measure the Main Landing Gear Up-and-Locked Sensor Clearance

SUBTASK 32-61-21-580-001

(1) Put the airplane on jacks. To jack the airplane, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-61-21-480-005

(2) Attach some clay, G02020 to the face of the sensor.

SUBTASK 32-61-21-860-003

(3) Do these steps to raise the main landing gear:

(a) For the landing gear that the sensor is attached to, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

NOTE: Refer to (Figure 501) for the sensor location.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE LANDING GEAR AREA. THE LANDING GEAR WILL RETRACT WHEN THE LANDING GEAR CONTROL LEVER IS PUT IN THE UP POSITION. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

(b) Supply hydraulic power to operate the landing gear. To do this, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Put the landing gear lever in the up position.

SUBTASK 32-61-21-860-004

(4) Put the landing gear lever in the down position after the main landing gear has retracted fully.

SUBTASK 32-61-21-580-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) Install the downlock pins on all the landing gear. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-21-220-001

(6) Measure the compressed thickness of the clay, G02020.

SUBTASK 32-61-21-820-001

(7) If the sensor clearance does not agree with the dimension shown in Figure 501, do this task: Main Landing Gear Uplock Sensor Clearance Adjustment, TASK 32-61-21-820-801.

NOTE: Write down the measured clearance so you will know what adjustments must be made.

SUBTASK 32-61-21-840-001

(8) If the sensor clearance is correct, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-61-21-860-008

(9) If hydraulic power is not necessary at this time, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR UPLOCK
(RIGHT MAIN LANDING GEAR UPLOCK IS EQUIVALENT)

A

F98144 S0006575871_V2

Main Landing Gear Up-and-Locked Sensor Adjustment
Figure 501/32-61-21-990-802 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT MAIN LANDING GEAR UPLOCK
(RIGHT MAIN LANDING GEAR UPLOCK IS EQUIVALENT)

A

1937001 S0000367526_V2

Main Landing Gear Up-and-Locked Sensor Adjustment
Figure 501/32-61-21-990-802 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1

SYSTEM NO.	SENSOR NO.	MLG	LOCATION
1	S0072	L	FWD
2	S1016	L	AFT
1	S0074	R	FWD
2	S1017	R	AFT

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

F98012 S0006575872_V4

Main Landing Gear Up-and-Locked Sensor Adjustment
Figure 501/32-61-21-990-802 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1

SYSTEM NO.	SENSOR NO.	MLG	LOCATION
1	S0072	L	FWD
2	S1016	L	AFT
1	S0074	R	FWD
2	S1017	R	AFT

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

1937022 S0000367527_V4

Main Landing Gear Up-and-Locked Sensor Adjustment
Figure 501/32-61-21-990-802 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-61-21-400-803

3. **Main Landing Gear Uplock Sensor Clearance Measurement (Airplane not on Jacks)**
(Figure 501)

A. **References**

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-4896	Adapter Assembly - Uplock, MLG Part #: C32048-1 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
G02020	Clay, Modeling	

D. **Location Zones**

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

E. **Access Panels**

Number	Name/Location
112A	Forward Access Door

F. **Prepare for the Measurement**

SUBTASK 32-61-21-860-013

(1) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-21-860-014

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlocks are not installed on all of the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-21-860-015

(3) Make sure that the control lever for the landing gear is in the OFF position.

G. Main Landing Gear Up-and-Locked Sensor Clearance Measurement

> **WARNING** MAKE SURE THAT THERE IS NO PRESSURE IN THE HYDRAULIC SYSTEM. PRESSURE IN THE HYDRAULIC SYSTEM CAN MOVE THE CONTROL SURFACES, CABLES, LANDING GEARS, AND LANDING GEAR DOORS QUICKLY. THEIR MOVEMENT CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

SUBTASK 32-61-21-860-009

(1) Engage the MLG uplock adapter assembly, SPL-4896, in the MLG Uplock hook.

SUBTASK 32-61-21-860-025

(2) Attach a square drive torque wrench or breaker bar to the MLG uplock adapter assembly, SPL-4896, and turn the MLG Uplock hook until it turns to the latched position.

SUBTASK 32-61-21-220-003

(3) Measure the sensor gap using a feeler gage.

SUBTASK 32-61-21-820-003

(4) If the sensor clearance does not agree with the dimension shown in Figure 501, do this task: Main Landing Gear Uplock Sensor Clearance Adjustment, TASK 32-61-21-820-801.

NOTE: Write down the measured clearance so you will know what adjustments must be made.

SUBTASK 32-61-21-860-028

(5) To put the aircraft back to its initial configuration, do these steps:

NOTE: This procedure gives two alternatives to put the aircraft back to its initial configuration.

(a) Use the MLG uplock adapter assembly, SPL-4896, to turn the MLG Uplock hook to the down and locked position.

NOTE: A large force is necessary to move the MLG uplock hook to the down and locked position.

1) Remove the MLG uplock adapter assembly, SPL-4896 from the MLG Uplock hook.

> **WARNING** BE CAREFUL WHEN YOU ENERGIZE THE HYDRAULIC POWER AND YOU MOVE THE LANDING GEAR LEVER TO THE DOWN POSITION. THE MLG UPLOCK HOOK WILL AUTOMATICALLY MOVE TO THE DOWN AND LOCKED POSITION WHICH CAN CAUSE INJURY TO PERSONNEL.

(b) If the MLG Uplock hook cannot move to the down and locked position, use aircraft hydraulic power as an alternative.

NOTE: When hydraulic power is energized and the landing gear lever is in the down position, the uplock hook moves to the down and locked position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that you remove the MLG uplock adapter assembly, SPL-4896, from the MLG Uplock hook.

2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

4) Put the control lever for the landing gear in the Down position.

NOTE: When hydraulic power is energized and the landing gear lever is in the down position, the uplock hook moves to the down and locked position.

5) If hydraulic power is not necessary at this time, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

H. Main Landing Gear Up-and-Locked Sensor Clearance Measurement (Alternate Method)

SUBTASK 32-61-21-860-026

(1) Engage the MLG uplock adapter assembly, SPL-4896, in the MLG Uplock hook.

SUBTASK 32-61-21-860-027

(2) Attach a square drive torque wrench or breaker bar to the MLG uplock adapter assembly, SPL-4896, and turn the uplock hook to the latched position.

SUBTASK 32-61-21-200-001

(3) Do this check of the main landing gear uplock sensor:

(a) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

(b) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

(c) Use the PSEU BITE to check for the clearance of the Uplock sensor.

1) To get access to the PSEU, do this step:

Open this access panel:

Number	Name/Location
112A	Forward Access Door

2) Push the ON/OFF switch on the PSEU BITE display.

3) Push the down arrow until OTHER FUNCTNS? shows.

4) Push the YES switch to select OTHER FUNCTNS?.

5) Push the down arrow until SENSOR RIGGING? shows.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

6) Push the YES switch to select SENSOR RIGGING?.

7) Push the down arrow until the applicable sensor identification shows.

NOTE: See the table in (Figure 501) for the sensor identification and location.

8) Push the YES switch to select the sensor.

9) Push the YES switch to select GAP GRAPH? The sensor number and gap display meter will show.

NOTE: You can also show the gap value in MILS (1 MIL equals 1/1000th of an inch) or required changes to the sensor gap. Push on the down arrow or NO switch to show these options.

10) Make sure that the PSEU display shows that the sensor clearance agrees with the necessary dimension.

NOTE: For a description of the sensor clearance display see (Figure 501).

11) If the sensor clearance does not agree with the dimension shown in Figure 501, do this task: Main Landing Gear Uplock Sensor Clearance Adjustment, TASK 32-61-21-820-801.

SUBTASK 32-61-21-860-030

(4) To put the aircraft back to its initial configuration, do these steps:

NOTE: This procedure gives two alternatives to put the aircraft back to its initial configuration.

(a) Use the MLG uplock adapter assembly, SPL-4896, to turn the MLG Uplock hook to the down and locked position.

NOTE: A large force is necessary to move the MLG uplock hook to the down and locked position.

1) Remove the MLG uplock adapter assembly, SPL-4896, from the MLG Uplock hook.

WARNING

BE CAREFUL WHEN YOU ENERGIZE THE HYDRAULIC POWER AND YOU MOVE THE LANDING GEAR LEVER TO THE DOWN POSITION. THE MLG UPLOCK HOOK WILL AUTOMATICALLY MOVE TO THE DOWN AND LOCKED POSITION WHICH CAN CAUSE INJURY TO PERSONNEL.

(b) If the MLG Uplock hook cannot move to the down and locked position, use aircraft hydraulic power as an alternative.

NOTE: When hydraulic power is energized and the landing gear lever is in the down position, the uplock hook moves to the down and locked position

1) Make sure that you remove the MLG uplock adapter assembly, SPL-4896, from the MLG Uplock hook.

2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

4) Put the control lever for the landing gear in the Down position.

NOTE: When hydraulic power is energized and the landing gear lever is in the down position, the uplock hook moves to the down and locked position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

5) If hydraulic power is not necessary at this time, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

I. Main Landing Gear Up-and-Locked Sensor Clearance Measurement (Alternate Method)

SUBTASK 32-61-21-480-007

(1) Attach some clay, G02020, to the face of the sensor.

NOTE: Refer to (Figure 501) for the sensor location.

SUBTASK 32-61-21-860-032

(2) Engage the MLG uplock adapter assembly, MLG uplock adapter assembly, SPL-4896, in the MLG uplock hook.

SUBTASK 32-61-21-860-011

(3) Attach a square drive torque wrench or breaker bar to the MLG uplock adapter assembly, SPL-4896, and turn the uplock hook into the closed position.

SUBTASK 32-61-21-860-012

(4) Turn the uplock hook into the open position, using MLG uplock adapter assembly, SPL-4896.

SUBTASK 32-61-21-220-004

(5) Measure the compressed thickness of the clay, G02020.

SUBTASK 32-61-21-820-004

(6) If the sensor clearance does not agree with the dimension shown in Figure 501, do this task: Main Landing Gear Uplock Sensor Clearance Adjustment, TASK 32-61-21-820-801.

NOTE: Write down the measured clearance so you will know what adjustments must be made.

SUBTASK 32-61-21-860-029

(7) To put the aircraft back to its initial configuration, do these steps:

NOTE: This procedure gives two alternatives to put the aircraft back to its initial configuration.

(a) Use the MLG uplock adapter assembly, SPL-4896, to turn the MLG Uplock hook to the down and locked position.

NOTE: A large force is necessary to move the MLG uplock hook to the down and locked position.

1) Remove the MLG uplock adapter assembly, SPL-4896, from the MLG Uplock hook.

WARNING	BE CAREFUL WHEN YOU ENERGIZE THE HYDRAULIC POWER AND YOU MOVE THE LANDING GEAR LEVER TO THE DOWN POSITION. THE MLG UPLOCK HOOK WILL AUTOMATICALLY MOVE TO THE DOWN AND LOCKED POSITION WHICH CAN CAUSE INJURY TO PERSONNEL.

(b) If the MLG Uplock hook cannot move to the down and locked position, use hydraulic power as an alternative.

NOTE: When hydraulic power is energized and the landing gear lever is in the down position, the uplock hook moves to the down and locked position.

1) Make sure that you remove the MLG uplock adapter assembly, SPL-4896, from the MLG Uplock hook.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801..

4) Put the control lever for the landing gear in the Down position.

NOTE: When hydraulic power is energized and the landing gear lever is in the down position, the uplock hook moves to the down and locked position.

5) If hydraulic power is not necessary at this time, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

——— END OF TASK ———

TASK 32-61-21-820-801

4. Main Landing Gear Uplock Sensor Clearance Adjustment

(Figure 501)

A. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

B. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

C. Main Landing Gear Uplock Sensor Clearance Adjustment

SUBTASK 32-61-21-820-002

(1) Adjust the sensor clearance.

(a) Remove the nuts [3] and washers [4] which hold the target in place.

(b) Remove the target [2] and shims [1].

(c) Clean the shims [1] and mounting surfaces.

(d) Adjust the shims [1] thickness as required to get the necessary sensor to target clearance, do one of the steps that follow:

1) Remove the laminations from the existing shims [1].

2) Apply additional shims [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

a) If it is necessary, remove the laminations from the new shims [1].

3) Replace the existing shims [1] with the new shims [1] and adjust the thickness.

a) If it is necessary, remove the laminations from the new shims [1].

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(e) Apply a thin coat of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces before assembly.

1) Wipe off the excess of compound.

(f) Replace the nuts [3] and washers [4] which hold the shim stack.

SUBTASK 32-61-21-220-002

(2) Measure the sensor clearance and compare to the requirement (TASK 32-61-21-400-802 or TASK 32-61-21-400-803).

(a) If the sensor clearance is not correct, do the steps to adjust the sensor clearance again.

SUBTASK 32-61-21-390-001

(3) Seal the shim stack.

(a) Clean the shims [1].

(b) Apply sealant, A00247, on the shim surfaces.

END OF TASK

TASK 32-61-21-710-801

5. Main Landing Gear Up-and-Locked Sensor Operational Test

(Figure 501)

A. References

Reference	Title
07-11-01-580-815	Lift the Airplane with the Jacks (P/B 201)
07-11-01-580-816	Lower the Airplane Off the Jacks (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-4896	Adapter Assembly - Uplock, MLG Part #: C32048-1 Supplier: 81205

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Prepare for Operational Test

SUBTASK 32-61-21-010-002

NOTE: This procedure gives two alternatives to do the operational check of the sensor, with the airplane on and off jacks.

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-61-21-580-003

(2) For the operational test on jacks, lift the airplane on jacks. To jack the airplane, do this task: Lift the Airplane with the Jacks, TASK 07-11-01-580-815.

SUBTASK 32-61-21-860-005

(3) For the operational test on jacks, raise the main landing gear.

(a) For the landing gear that the sensor is attached to, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

NOTE: Refer to (Figure 501) for the sensor location.

> **WARNING**
> MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE AWAY FROM THE LANDING GEAR BEFORE YOU APPLY HYDRAULIC POWER. THE LANDING GEAR CAN MOVE SUDDENLY WHEN YOU APPLY HYDRAULIC POWER TO THE AIRPLANE. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

(b) Supply hydraulic power to operate the landing gear. To do this, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Put the landing gear lever in the up position.

SUBTASK 32-61-21-860-022

(4) For the operational test not on jacks, do these steps:

> **WARNING**
> MAKE SURE THAT THERE IS NO PRESSURE IN THE HYDRAULIC SYSTEM. PRESSURE IN THE HYDRAULIC SYSTEM CAN MOVE THE CONTROL SURFACES, CABLES, LANDING GEARS, AND LANDING GEAR DOORS QUICKLY. THEIR MOVEMENT CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(a) Make sure that the control lever for the landing gear is in the OFF position.

(b) Engage the MLG uplock adapter assembly, SPL-4896, in the MLG Uplock hook.

(c) Attach a square drive torque wrench or breaker bar to the MLG uplock adapter assembly and turn the MLG Uplock hook until it turns to the latched position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Procedure

SUBTASK 32-61-21-740-001

(1) Use the PSEU BITE to test the sensor.

(a) Push the ON/OFF switch on the PSEU BITE display.

(b) Push the down arrow until OTHER FUNCTNS? shows.

(c) Push the YES switch to select OTHER FUNCTNS?.

(d) Push the down arrow until SENSOR RIGGING? shows.

(e) Push the YES switch to select SENSOR RIGGING?.

(f) Push the down arrow until the applicable sensor identification shows.

NOTE: See the table in (Figure 501) for the sensor identification and location.

(g) Push the YES switch to select the sensor.

(h) Push the YES switch to select GAP GRAPH? The sensor number and gap display meter will show.

NOTE: You can also show the gap value in MILS (1 MIL equals 1/1000th of an inch) or required changes to the sensor gap. Push on the down arrow or NO switch to show these options.

(i) Make sure that the PSEU display shows that the sensor clearance agrees with the necessary dimension.

NOTE: For a description of the sensor clearance display see (Figure 501).

G. Return the airplane to its usual condition

SUBTASK 32-61-21-740-002

(1) Push the ON/OFF switch on the PSEU module to turn off the PSEU BITE.

(a) Push the YES switch to confirm that you want to turn off the display.

SUBTASK 32-61-21-840-002

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-61-21-860-035

(3) If it is engaged, remove the MLG uplock adapter assembly, SPL-4896, from the uplock hook.

SUBTASK 32-61-21-860-006

WARNING MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE AWAY FROM THE LANDING GEAR BEFORE YOU LOWER THE LANDING GEAR. INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Put the landing gear lever in the down position.

NOTE: For the "operational test not on jacks", when the landing gear lever is put in the down position, the hydraulic lines to the uplock mechanism actuator will open. When hydraulic power is supplied, the uplock hook will move to the down position.

SUBTASK 32-61-21-860-007

(5) If hydraulic power is not necessary at this time, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-21-580-004

WARNING	MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) If downlock pins are not installed, install downlock pins on the landing gear. To do this, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-21-840-003

(7) If the airplane is on jacks, lower the airplane from the jacks. To lower the airplane, do this task: Lower the Airplane Off the Jacks, TASK 07-11-01-580-816.

SUBTASK 32-61-21-860-024

(8) If electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR DOWN-AND-LOCKED SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the main landing gear down-and-locked sensor.

(2) Installation of the main landing gear down-and-locked sensor.

B. The procedures for the left and right installations are similar.

TASK 32-61-31-020-801

2. Main Landing Gear Down-and-Locked Sensor Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)

B. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

C. Prepare for Maintenance Near the Main Landing Gear

SUBTASK 32-61-31-480-009

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-31-480-010

(2) Make sure that the chocks are installed at the wheels (PAGEBLOCK 10-11-05/201).

SUBTASK 32-61-31-840-005

> **WARNING** OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-61-31-860-003

(4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Main Landing Gear Down-and-Locked Sensor Removal

SUBTASK 32-61-31-020-001

(1) Remove the sensor connector from the airplane connector.

SUBTASK 32-61-31-020-006

(2) Remove the sensor contact pins from the connector.

SUBTASK 32-61-31-480-011

(3) Tie a string at least 8 ft (2.4 m) long to the sensor wires.

NOTE: This string will be used to pull wire of the new sensor through the conduit. The string can be tied to the landing gear structure to make sure that the string is not pulled through the conduit.

SUBTASK 32-61-31-020-002

(4) Remove the sensor [4].

LOM ALL; AIRPLANES WITH STEEL SENSORS

(a) Remove the bolts [1], nuts [2], and washers [3] which attach the sensors [4] to the side strut assembly.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

Remove the bolts [1], nuts [2], washers [3] and washers [5] which attach the sensor [4] to the side strut assembly.

LOM ALL

(b) Remove the sensor [4] from the side strut assembly.

1) Make sure that you do not pull the string through the conduit.

(c) Remove the string from the sensor [4].

SUBTASK 32-61-31-210-001

(5) Examine the sensor [4], the side strut assembly, and adjacent areas for signs of damage.

NOTE: Damage to the sensor may be an indication of an incorrect clearance between the sensor and the target.

(a) If you find damage, make a note of the damage for the installation procedure.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F63877 S0006575878_V2

Main Landing Gear Down-and-Locked Sensor Installation
Figure 401/32-61-31-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1937058 S0000367533_V2

Main Landing Gear Down-and-Locked Sensor Installation
Figure 401/32-61-31-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DOWN-AND-LOCKED SENSORS

A-A

1

ITEM	SENSOR NO.	MLG	LOCATION
[4]	S0071	L	FWD
[4]	S0073	R	FWD
[4]	S0301	R	AFT
[4]	S0302	L	AFT

F67280 S0006575879_V4

Main Landing Gear Down-and-Locked Sensor Installation
Figure 401/32-61-31-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DOWN-AND-LOCKED SENSORS

A-A

1

ITEM	SENSOR NO.	MLG	LOCATION
[4]	S0071	L	FWD
[4]	S0073	R	FWD
[4]	S0301	R	AFT
[4]	S0302	L	AFT

1921735 S0000356646_V5

Main Landing Gear Down-and-Locked Sensor Installation
Figure 401/32-61-31-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-61-31-400-801

3. Main Landing Gear Down-and-Locked Sensor Installation

(Figure 401)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-61-31-220-801	Main Landing Gear Down-and-Locked Sensor Clearance Measurement (P/B 501)
32-61-31-710-801	Main Landing Gear Down-and-Locked Sensor Operational Test (P/B 501)
SWPM 20-60-03	Special Protection of Electrical Connectors
SWPM Ch 20	Standard Wiring Practices Manual

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50171	Compound - Corrosion Inhibiting Compound, Interior Application - D5026NS or ZC-026	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Sensor	32-61-31-01-160	LOM ALL
		32-61-31-01-220	LOM ALL

D. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

E. Prepare for the Maintenance Near the Main Landing Gear

SUBTASK 32-61-31-480-012

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-31-480-013

(2) Make sure that the chocks are installed at the wheels.

(a) If the chocks are not installed, do this task: Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801 or Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802.

SUBTASK 32-61-31-840-006

WARNING OBEY THE PROCEDURE THAT PREPARES TO PUT THE AIRPLANE IN THE AIR MODE. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Make sure that the airplane systems have been prepared for air mode simulation.

(a) If the airplane systems are no prepared, do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-61-31-860-004

(4) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

F. Main Landing Gear Down-and-Locked Sensor Installation

SUBTASK 32-61-31-420-001

(1) Prepare the replacement sensor [4] for installation on the airplane.

(a) Cut the sensor leads to the correct length:

1) S0071 - #1 L Gear Down & Locked Sensor: 64 in. (1.6 m)
2) S0073 - #1 R Gear Down & Locked Sensor: 64 in. (1.6 m)
3) S0301 - #2 R Gear Down & Locked Sensor: 52 in. (1.3 m)
4) S0302 - #2 L Gear Down & Locked Sensor: 52 in. (1.3 m).

(b) Attach the contact pins to the sensor leads.

NOTE: If it is necessary, refer to SWPM Ch 20.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

SUBTASK 32-61-31-410-001

(2) Fay seal the bottom of the sensor [4] with sealant, A00247.

LOM ALL

SUBTASK 32-61-31-420-002

(3) Install the main landing gear down-and-locked sensor [4].

(a) Attach the string to the new sensor leads.

(b) Pull the sensor leads through the conduit.

(c) Position the sensor [4] and bracket on the side strut assembly.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(d) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to thread reliefs, threads, and washer faces prior to assembly.

LOM ALL; AIRPLANES WITH STEEL SENSORS

(e) Install the bolts [1], washers [3], and nuts [2].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(f) Install the bolts [1], washers [3], washers [5], and nuts [2].

NOTE: Use CRES washers below bolt heads with titanium sensors. Use cad-plated washers below nuts. CRES washers are optional below bolt heads with stainless steel sensors.

LOM ALL

SUBTASK 32-61-31-210-002

(4) Before you connect the sensor leads to the airplane, examine the connector for corrosion.

WARNING

DO THE STEPS BELOW IF THE AIRPLANE OPERATES WHERE DEICING FLUID THAT CONTAINS POTASSIUM FORMATE OR POTASSIUM ACETATE IS USED. ALSO, DO THE STEPS FOR ALL AIRPLANES THAT YOU FOUND CORROSION IN THE ELECTRICAL CONNECTORS IN THE MAIN WHEEL WELL. THE ELECTRICAL CONNECTORS ARE IN A SYSTEM THAT IS NECESSARY FOR SAFE FLIGHT.

(a) If there was corrosion, correct the problem (SWPM 20-60-03).

(b) Apply D5026NS or ZC-026 compound, G50171, to the connector (SWPM 20-60-03).

SUBTASK 32-61-31-420-003

(5) Connect the sensor leads to the airplane.

(a) Insert the connector pins into the connector.

(b) Attach the plug side of the connector to the jack side of the connector at the disconnect bracket.

SUBTASK 32-61-31-350-001

(6) If you found damage to the sensor [4] or the adjacent area during the removal procedure, do these steps:

(a) Repair or replace all damaged components or areas.

NOTE: Damage to the sensor, the target, or the adjacent areas may be an indication of an incorrect sensor clearance.

(b) Measure the sensor [4] clearance, do this task: Main Landing Gear Down-and-Locked Sensor Clearance Measurement, TASK 32-61-31-220-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Main Landing Gear Down-and-Locked Sensor Installation Test

SUBTASK 32-61-31-220-003

(1) Do this task: Main Landing Gear Down-and-Locked Sensor Clearance Measurement, TASK 32-61-31-220-801.

SUBTASK 32-61-31-860-002

(2) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 32-61-31-860-006

(3) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

SUBTASK 32-61-31-740-003

(4) Do this task: Main Landing Gear Down-and-Locked Sensor Operational Test, TASK 32-61-31-710-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MAIN LANDING GEAR DOWN-AND-LOCKED SENSOR - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) Main landing gear down-and-locked sensor clearance measurement.

(2) Main landing gear down-and-locked sensor clearance adjustment.

(3) Main landing gear down-and-locked sensor operational test.

B. The procedures for the left and right installations are similar.

TASK 32-61-31-220-801

2. Main Landing Gear Down-and-Locked Sensor Clearance Measurement

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

C. Prepare to Measure the Clearance

SUBTASK 32-61-31-480-003

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-31-480-004

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Measure the Main Landing Gear Down-and-Locked Sensor Clearance

SUBTASK 32-61-31-220-001

(1) Measure the clearance between the sensor and target.

SUBTASK 32-61-31-820-001

(2) If the sensor clearance is outside the tolerance shown in (Figure 501), do this task: Main Landing Gear Down-and-Locked Sensor Clearance Adjustment, TASK 32-61-31-400-802.

NOTE: Write down the measured clearance so you will know what adjustments must be made.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F96991 S0006575883_V2

Main Landing Gear Down-and-Locked Sensor Adjustment
Figure 501/32-61-31-990-802 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Down-and-Locked Sensor Adjustment
Figure 501/32-61-31-990-802 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DOWN-AND-LOCKED SENSORS

A-A

1

SYSTEM NO.	SENSOR NO.	MLG	LOCATION
[1]	S0071	L	FWD
[1]	S0073	R	FWD
[2]	S0301	R	AFT
[2]	S0302	L	AFT

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU)

F97009 S0006575884_V4

Main Landing Gear Down-and-Locked Sensor Adjustment
Figure 501/32-61-31-990-802 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DOWN-AND-LOCKED SENSORS

A-A

1

SYSTEM NO.	SENSOR NO.	MLG	LOCATION
[1]	S0071	L	FWD
[1]	S0073	R	FWD
[2]	S0301	R	AFT
[2]	S0302	L	AFT

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

**PROXIMITY SWITCH
ELECTRONICS UNIT (PSEU)**

1921676 S0000356647_V4

**Main Landing Gear Down-and-Locked Sensor Adjustment
Figure 501/32-61-31-990-802 (Sheet 4 of 4)**

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-61-31-400-802

3. Main Landing Gear Down-and-Locked Sensor Clearance Adjustment

(Figure 501)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Location Zones

Zone	Area
734	Left Main Landing Gear
744	Right Main Landing Gear

D. Prepare for the Clearance Adjustment

SUBTASK 32-61-31-480-005

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear.

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-31-480-006

(2) Make sure that chocks are installed at the wheels.

(a) If the chocks are not installed, do this task: Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801 or Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802.

E. Main Landing Gear Down-and-Locked Sensor Clearance Adjustment

SUBTASK 32-61-31-020-005

(1) Move the sensor [6] out of the way, do these steps:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH STEEL SENSORS

(a) Remove the nuts [7], washers [8], and bolts [9] that secure the sensor [6] to the side strut assembly.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(b) Remove the nuts [7], washers [5], washers [8], and bolts [9] that secure the sensor [6] to the side strut assembly.

LOM ALL

(c) Remove the sensor [6] from the side strut assembly.

SUBTASK 32-61-31-020-003

(2) Remove the nuts [4] and washers [3].

SUBTASK 32-61-31-020-004

(3) Remove the target [1] and shims [2].

SUBTASK 32-61-31-110-001

(4) Clean the shims [2] and mounting surfaces.

SUBTASK 32-61-31-820-002

(5) Remove or add shims [2] as required to get the necessary clearance.

SUBTASK 32-61-31-620-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(6) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces.

(a) Wipe off the excess.

SUBTASK 32-61-31-420-004

(7) Assemble the target assembly.

(a) Seal the shim stack.

1) Clean the shims [2].

2) Brush primer, C00259, on the shim surfaces.

3) Apply sealant, A00247, to the shim surfaces.

(b) Position the shims [2] and target [1] on the mounting bracket.

(c) Install the nuts [4] and washers [3].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

SUBTASK 32-61-31-410-002

(8) Fay seal the bottom of the sensor [6] with sealant, A00247.

LOM ALL

SUBTASK 32-61-31-420-005

(9) Re-attach the main landing gear down-and-locked sensor to the side strut assembly, do these steps:

(a) Position the sensor [6] and bracket on the side strut assembly.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING**
> USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to thread reliefs, threads, and washer faces prior to assembly.

LOM ALL; AIRPLANES WITH STEEL SENSORS

(c) Install the nuts [7], washers [8], and bolts [9].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(d) Install the nuts [7], washers [5], washers [8], and bolts [9].

NOTE: Use CRES washers below bolt heads with titanium sensors. Use cad-plated washers below nuts. CRES washers are optional below bolt heads with stainless steel sensors.

LOM ALL

SUBTASK 32-61-31-220-002

(10) Measure the sensor clearance and compare the measurement to (Figure 501).

(a) If the sensor clearance is not correct, adjust the sensor clearance again.

——— END OF TASK ———

TASK 32-61-31-710-801

4. Main Landing Gear Down-and-Locked Sensor Operational Test

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

C. Access Panels

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Prepare for the Operational Test

SUBTASK 32-61-31-480-007

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-31-480-008

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-61-31-860-009

(3) If it is necessary, supply electrical power. To do this, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

E. Procedure

SUBTASK 32-61-31-010-002

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-61-31-740-002

(2) Use the PSEU BITE to test the sensor.

(a) Push the ON/OFF switch on the PSEU BITE display.

(b) Push the down arrow until OTHER FUNCTNS? shows.

(c) Push the YES switch to select OTHER FUNCTNS?.

(d) Push the down arrow until SENSOR RIGGING? shows.

(e) Push the YES switch to select SENSOR RIGGING?.

(f) Push the down arrow until the applicable sensor identification shows.

NOTE: See the table in (Figure 501) for the sensor identification and location.

(g) Push the YES switch to select the sensor.

(h) Push the YES switch to select GAP GRAPH? The sensor number and gap display meter will show.

NOTE: You can also display the gap value in MILS (1 MIL equals 1/1000th of an inch) or required changes to the sensor gap. Push on the down arrow or NO switch to show these options.

(i) Make sure the PSEU display shows the sensor clearance within tolerance.

NOTE: For a description of the sensor clearance display see (Figure 501).

F. Return the airplane to its normal condition.

SUBTASK 32-61-31-840-003

(1) Push the ON/OFF switch on the PSEU module to turn off the PSEU BITE.

(a) Push the YES switch to confirm that you want to turn off the display.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-31-840-004

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-61-31-860-010

(3) If it is not necessary, remove electrical power. To do this, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR LOCK SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the nose landing gear lock sensor.

(2) Installation of the nose landing gear lock sensor.

B. The procedures for the number 1 and number 2 installations are similar.

TASK 32-61-41-020-801

2. Nose Landing Gear Lock Sensor Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)

B. Location Zones

Zone	Area
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-61-41-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear.

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-41-480-002

(2) Make sure that chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-61-41-840-001

> **WARNING** OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-61-41-860-001

(4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Nose Landing Gear Lock Sensor Removal

SUBTASK 32-61-41-020-001

(1) Disconnect the sensor wires in the junction box as follows:

(a) Remove the screws [1] and washers [2] that secure the junction box cover [3].

(b) Remove the junction box cover [3].

(c) Remove the sensor wire contacts from the terminal block in the junction box.

(d) Attach a string 5 feet long to the sensor wire.

NOTE: This string will be used to pull wire of the new sensor through the conduit. The string can be tied to the landing gear structure to ensure that the string is not pulled through the conduit.

SUBTASK 32-61-41-020-002

(2) Remove the sensor [4], do these steps:

LOM ALL; AIRPLANES WITH STEEL SENSORS

(a) Remove the nuts [7], washers [6], clamp [8], and bolts [5] that secure the sensor [4] to the mounting bracket.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS WITH BOLTS

(b) Remove the nuts [7], washers [6], clamp [8], washers [9], and bolts [5] that secure the sensor [4] to the mounting bracket.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS WITH SCREWS

(c) Remove the nuts [7], washers [6], clamp [8], and screws [10] that secure the sensor [4] to the mounting bracket.

LOM ALL

(d) Remove the sensor [4] from the mounting bracket.

(e) Pull the sensor wires out of the conduit.

1) Make sure that do not pull the string through the conduit.

(f) Remove the string from the sensor [4].

(g) Remove the sealant from the conduit end.

SUBTASK 32-61-41-210-001

(3) Examine the sensor [4] and adjacent areas for signs of damage.

NOTE: Damage to the sensor may be an indication of an incorrect clearance between the sensor and the target.

(a) If damage is found, make a note of the damage for the installation procedure.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F70420 S0006575890_V3

Nose Landing Gear Lock Sensor Installation
Figure 401/32-61-41-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LEFT JUNCTION BOX
(EXAMPLE)

B

RIGHT JUNCTION BOX
(EXAMPLE)

C

F70817 S0006575891_V4

Nose Landing Gear Lock Sensor Installation
Figure 401/32-61-41-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0846	LEFT
2	S0854	RIGHT

F77629 S0006575892_V5

Nose Landing Gear Lock Sensor Installation
Figure 401/32-61-41-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0846	LEFT
2	S0854	RIGHT

1921725 S0000356655_V5

Nose Landing Gear Lock Sensor Installation
Figure 401/32-61-41-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0846	LEFT
2	S0854	RIGHT

2994397 S0000770252_V1

Nose Landing Gear Lock Sensor Installation
Figure 401/32-61-41-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-61-41-400-801

3. Nose Landing Gear Lock Sensor Installation

(Figure 401)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-61-41-220-801	Nose Landing Gear Lock Sensor Clearance Measurement (P/B 501)
32-61-41-710-801	Nose Landing Gear Lock Sensor Operational Test (P/B 501)
SWPM 20-83-01/001	Standard Wiring Practices Manual

B. Consumable Materials

Reference	Description	Specification
A00230	Compound - Electrical Insulating Coating	BMS5-37
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Sensor	32-61-41-02-110	LOM ALL

D. Location Zones

Zone	Area
731	Left Main Landing Gear - Outboard Door
741	Right Main Landing Gear - Outboard Door

E. Prepare for the Installation

SUBTASK 32-61-41-480-003

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear.

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-41-480-004

(2) Make sure that the chocks are installed at the wheels.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) If the chocks are not installed, do this task: Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801 or Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802.

SUBTASK 32-61-41-840-002

> **WARNING** OBEY THE PROCEDURE THAT PREPARES TO PUT THE AIRPLANE IN THE AIR MODE. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Make sure that the airplane systems have been prepared for air mode simulation.

(a) If airplane systems are not prepared, do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-61-41-860-002

(4) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

F. Nose Landing Gear Lock Sensor Installation

SUBTASK 32-61-41-350-001

(1) Cut the sensor leads to the correct length:

(a) S0846 - #1 Nose Landing Gear Lock: 42.5 in. (1.1 m)

(b) S0854 - #2 Nose Landing Gear Lock: 37.5 in. (95.3 cm).

SUBTASK 32-61-41-420-001

(2) Attach the contacts to the sensor wires (SWPM 20-83-01/001).

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

SUBTASK 32-61-41-410-004

(3) Fay seal the bottom of the sensor [4] with sealant, A00247.

LOM ALL

SUBTASK 32-61-41-420-002

(4) Install the sensor [4], do these steps:

(a) Position the sensor [4] on the mounting bracket.

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces.

(c) Wipe off the excess.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH STEEL SENSORS

(d) Install the bolts [5].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS WITH BOLTS

(e) Install the bolts [5] and washers [6].

NOTE: Use cad-plated washers below bolt heads.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS WITH SCREWS

(f) Install the screws [10].

LOM ALL

SUBTASK 32-61-41-420-003

(5) Attach the sensor wiring to the landing gear structure, do these steps:

(a) Position the sensor wiring in the clamp [8].

LOM ALL; AIRPLANES WITH STEEL SENSORS

(b) Loosely install the clamp [8], washers [6], and nuts [7].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS WITH BOLTS

(c) Loosely install the clamp [8], washers [9], and nuts [7].

NOTE: Use CRES washers below nuts with titanium sensors. Use cad-plated washers below bolt heads. CRES washers are optional below nuts with stainless steel sensors.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS WITH SCREWS

(d) Loosely install the clamp [8], washers [6], and nuts [7].

NOTE: Use CRES washers below nuts with titanium sensors. CRES washers are optional below nuts with stainless steel sensors.

LOM ALL

(e) Make sure that the sensor wiring loop is a maximum of 0.9 in. (22.9 mm) (Figure 401).

(f) Tighten the nuts [7].

SUBTASK 32-61-41-410-001

(6) Attach the sensor wires to the airplane, do these steps:

(a) Attach the string to the sensor wires.

(b) Pull the wires through the conduit to the junction box.

(c) Remove the string from the sensor wires.

(d) Install the sensor contacts into the terminal block as follows:

1) Red wire goes into position A.

2) Yellow wire goes into position E.

3) Blue wire goes into position C.

SUBTASK 32-61-41-410-002

(7) Install the junction box cover [3].

SUBTASK 32-61-41-410-003

(8) Install the washers [2] and screws [1] that secure the junction box cover [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-41-400-001

(9) If damage is found to the sensor [4] or the adjacent area during the removal procedure, do these steps:

(a) Repair or replace all damaged components or areas.

NOTE: Damage to the sensor, the target, or the adjacent areas may be an indication of an incorrect sensor clearance.

(b) Measure the sensor [4] clearance (TASK 32-61-41-220-801).

G. Nose Landing Gear Lock Sensor Installation Test

SUBTASK 32-61-41-720-001

(1) Do a post installation check of the nose gear lock sensor [4].

(a) Do this task: Nose Landing Gear Lock Sensor Clearance Measurement, TASK 32-61-41-220-801.

(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

(c) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

(d) Do this task: Nose Landing Gear Lock Sensor Operational Test, TASK 32-61-41-710-801.

SUBTASK 32-61-41-390-001

(2) Seal the sensor wires in the conduit end.

(a) Fill the conduit end with compound, A00230.

(b) Make sure that the sealant enters the conduit so that it is visible through the inspection holes on the conduit.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR LOCK SENSOR - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) Nose landing gear lock sensor clearance measurement.

(2) Nose landing gear lock sensor clearance adjustment.

(3) Nose landing gear lock sensor operational test.

B. The procedures for both sensor installations are similar.

TASK 32-61-41-220-801

2. Nose Landing Gear Lock Sensor Clearance Measurement

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
713	Nose Landing Gear

C. Prepare to Measure the Clearance

SUBTASK 32-61-41-480-005

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-41-480-006

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Measure the Nose Landing Gear Lock Sensor Clearance

SUBTASK 32-61-41-220-001

(1) Measure the clearance between the sensor and target.

SUBTASK 32-61-41-820-001

(2) If the sensor clearance is outside the tolerance shown in (Figure 501), do this task: Nose Landing Gear Lock Sensor Clearance Adjustment, TASK 32-61-41-400-802.

NOTE: Write down the measured clearance so you will know what adjustments must be made.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F97935 S0006575896_V2

Nose Landing Gear Lock Sensor Adjustment
Figure 501/32-61-41-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU)

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0846	L
2	S0854	R

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

F97964 S0006575897_V5

Nose Landing Gear Lock Sensor Adjustment
Figure 501/32-61-41-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU)

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0846	L
2	S0854	R

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

1921757 S0000356658_V4

Nose Landing Gear Lock Sensor Adjustment
Figure 501/32-61-41-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-61-41-400-802

3. Nose Landing Gear Lock Sensor Clearance Adjustment

(Figure 501)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Location Zones

Zone	Area
713	Nose Landing Gear

D. Prepare for the Adjustment

SUBTASK 32-61-41-480-007

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear.

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-41-480-008

(2) Make sure that the chocks are installed at the wheels.

(a) If the chocks are not installed, do this task: Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801 or Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802.

E. Nose Landing Gear Lock Sensor Clearance Adjustment

SUBTASK 32-61-41-020-005

(1) Do these steps to remove the nose landing gear locked sensor [6] from the drag strut:

LOM ALL; AIRPLANES WITH STEEL SENSORS

(a) Remove the bolts [7], washers [8], nuts [9], and clamp [10] from the sensor [6].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(b) Remove the bolts [7], washers [8], washers [11], nuts [9], and clamp [10] from the sensor [6].

LOM ALL

(c) Move the sensor [6] away from the drag strut.

SUBTASK 32-61-41-020-003

(2) Do these steps to remove the target [1] and shims [2]:

(a) Remove the bolts [5], nuts [4], and washers [3].

(b) Remove the target [1] and shims [2].

SUBTASK 32-61-41-110-001

(3) Clean the shims [2] and mounting surfaces.

SUBTASK 32-61-41-820-002

(4) Do one of the following steps to adjust the shims [2] thickness to get the necessary clearance between the target [1] and sensor [6] (Figure 501):

(a) Remove the laminations from the existing shims [2].

(b) Apply the new additional shims [2].

1) If it is necessary, remove the laminations from the new shims [2].

(c) Replace the existing shims [2] with the new shims [2].

1) If it is necessary, remove the laminations from the new shims [2].

SUBTASK 32-61-41-620-001

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(5) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces.

(a) Wipe off the excess.

SUBTASK 32-61-41-420-004

(6) Do these steps to assemble the target:

(a) Position the shims [2] and target [1] on the mounting bracket.

(b) Install the bolts [5], nuts [4], and washers [3].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

SUBTASK 32-61-41-410-005

(7) Fay seal the bottom of the sensor [6] with sealant, A00247.

LOM ALL

SUBTASK 32-61-41-420-005

(8) Do these steps to re-install the sensor [6]:

(a) Position the sensor [6] on the mounting bracket.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces.

1) Wipe off the excess.

LOM ALL; AIRPLANES WITH STEEL SENSORS

(c) Attach the sensor to the drag strut with the bolts [7], washers [8], nuts [9], and clamp [10] attaching hardware.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(d) Attach the sensor to the drag strut with the bolts [7], washers [8], washers [11], nuts [9], and clamp [10] attaching hardware.

NOTE: Use CRES washers below nuts with titanium sensors. Use cad-plated washers below bolt heads. CRES washers are optional below nuts with stainless steel sensors.

LOM ALL

SUBTASK 32-61-41-220-002

(9) Measure the sensor clearance (TASK 32-61-41-220-801).

(a) Make sure that the clearance is correct (Figure 501).

1) If the sensor clearance is not correct, then do the steps to adjust the sensor clearance again.

SUBTASK 32-61-41-390-002

(10) Do these steps to seal the shims [2] stack:

(a) Clean the shims [2].

(b) Brush primer, C00259, on the shims [2] surfaces.

(c) Apply sealant, A00247, to the shims [2] surfaces.

END OF TASK

TASK 32-61-41-710-801

4. Nose Landing Gear Lock Sensor Operational Test

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Operational Test

SUBTASK 32-61-41-480-009

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-41-480-010

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-61-41-860-004

(3) If it is necessary, supply electrical power. To do this, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

E. Operational Test of the Nose Landing Gear Lock Sensor

SUBTASK 32-61-41-010-001

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-61-41-740-001

(2) Use the PSEU BITE to test the sensor.

(a) Push the ON/OFF switch on the PSEU BITE display.

(b) Push the down arrow until OTHER FUNCTNS? shows.

(c) Push the YES switch to select OTHER FUNCTNS?.

(d) Push the down arrow until SENSOR RIGGING? shows.

(e) Push the YES switch to select SENSOR RIGGING?.

(f) Push the down arrow until the applicable sensor identification shows.

NOTE: See the table in (Figure 501) for the sensor identification and location.

(g) Push the YES switch to select the sensor.

(h) Push the YES switch to select GAP GRAPH? The sensor number and gap display meter will show.

NOTE: You can also display the gap value in MILS (1 MIL equals 1/1000th of an inch) or required changes to the sensor gap. Push on the down arrow or NO switch to show these options.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(i) Make sure the PSEU display shows the sensor clearance within tolerance.

NOTE: For a description of the sensor clearance display see (Figure 501).

F. Return the airplane to its normal condition.

SUBTASK 32-61-41-840-003

(1) Push the ON/OFF switch on the PSEU BITE display to turn off the PSEU BITE.

(a) Push the YES switch to confirm that you want to turn off the display.

SUBTASK 32-61-41-840-004

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-61-41-860-005

(3) If it is not necessary, remove electrical power. To do this, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR DOWN POSITION SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the nose landing gear down position sensor.

(2) Installation of the nose landing gear down position sensor.

B. The procedures for the #1 and #2 sensor installations are similar.

TASK 32-61-51-020-801

2. Nose Landing Gear Down Position Sensor Removal

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)

B. Location Zones

Zone	Area
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

C. Prepare for the Removal

SUBTASK 32-61-51-480-005

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-51-480-006

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 32-61-51-840-003

> **WARNING** OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-61-51-860-001

(4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Nose Landing Gear Down Position Sensor Removal

SUBTASK 32-61-51-020-003

(1) Disconnect the sensor wires in the junction box:

(a) Remove the screws [1] and washers [2] that hold the junction box cover [3].

(b) Remove the junction box cover [3].

(c) Remove the sensor wire contacts from the terminal block in the junction box.

(d) Attach a string 5 feet long to the sensor wire.

NOTE: This string will be used to pull wire of the new sensor through the conduit. You can tie the string to the landing gear structure to make sure the string is not pulled through the conduit.

SUBTASK 32-61-51-020-004

(2) Remove the sensor [6]:

LOM ALL; AIRPLANES WITH STEEL SENSORS

(a) Remove the bolts [4], washers [5] and nuts [7] that hold the sensor [6] to the mounting bracket.

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

Remove the bolts [4], washers [5], washers [8], and nuts [7] that hold the sensor [6] to the mounting bracket.

LOM ALL

(b) Remove the sensor [6] from the bracket.

(c) Pull the sensor wires out of the conduit.

NOTE: Make sure you do not pull the string through the conduit.

(d) Remove the string from the sensor [6].

SUBTASK 32-61-51-210-001

(3) Examine the sensor [6] and adjacent areas for signs of damage.

NOTE: Damage to the sensor [6] can be an indication of an incorrect clearance between the sensor [6] and the target.

(a) If you find damage, make a note of the damage for the installation procedure.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Nose Landing Gear Down Sensor Installation
Figure 401/32-61-51-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE)

B

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0845	LEFT
2	S0853	RIGHT

(EXAMPLE)

C

F75589 S0006575904_V5

Nose Landing Gear Down Sensor Installation
Figure 401/32-61-51-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE)

B

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0845	LEFT
2	S0853	RIGHT

(EXAMPLE)

C

1921729 S0000356659_V4

Nose Landing Gear Down Sensor Installation
Figure 401/32-61-51-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-61-51-400-802

3. Nose Landing Gear Down Position Sensor Installation

(Figure 401)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-61-51-220-801	Nose Landing Gear Down Position Sensor Clearance Measurement (P/B 501)
32-61-51-710-801	Nose Landing Gear Down Position Sensor Operational Test (P/B 501)
SWPM 20-83-01/001	Standard Wiring Practices Manual

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
6	Sensor	32-61-51-01-005	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		32-61-51-01-007	LOM 422-434, 437-447, 450-999

D. Location Zones

Zone	Area
710	Subzone - Landing Gear: Nose Landing Gear and Landing Gear Doors

E. Prepare for the Installation

SUBTASK 32-61-51-480-007

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear.

(a) If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-51-480-008

(2) Make sure that the chocks are installed at the wheels.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) If the chocks are not installed, do this task: Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801 or Chock Installation in Winds More than 35 Knots - Handling, TASK 10-11-05-500-802.

SUBTASK 32-61-51-840-004

> **WARNING** OBEY THE PROCEDURE THAT PREPARES TO PUT THE AIRPLANE IN THE AIR MODE. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) If it is necessary, do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 32-61-51-860-002

(4) Make sure that these circuit breakers are open and have safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

F. Nose Landing Gear Down Position Sensor Installation

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

SUBTASK 32-61-51-410-005

(1) Fay seal the bottom of the sensor [6] with sealant, A00247.

LOM ALL

SUBTASK 32-61-51-420-003

(2) Attach the sensor [6] to the mounting bracket.

(a) Put the sensor [6] in its position on the mounting bracket.

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237 (preferred), or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces.

(c) Wipe off the excess.

LOM ALL; AIRPLANES WITH STEEL SENSORS

(d) Install the washers [5], nuts [7] and bolts [4].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

(e) Install the washers [5], washers [8], nuts [7], and bolts [4].

NOTE: Use Corrosion Resistant Steel (CRES) washers below bolt heads with titanium sensors. Use cad-plated washers below nuts. CRES washers are optional below bolt heads with stainless steel sensors.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-51-410-001

(3) Attach the sensor wires to the airplane.

(a) Attach the string to the sensor wires.

(b) Pull the wires through the conduit to the junction box.

(c) Remove the string from the sensor wires.

SUBTASK 32-61-51-350-002

(4) Cut the sensor wires to the correct length.

SUBTASK 32-61-51-420-004

(5) Attach the contacts to the sensor wires (SWPM 20-83-01/001).

SUBTASK 32-61-51-420-005

(6) Install the sensor contacts into the terminal block.

(a) Red wire goes into position A.

(b) Yellow wire goes into position E.

(c) Blue wire goes into position C.

SUBTASK 32-61-51-410-002

(7) Re-install the junction box cover [3].

SUBTASK 32-61-51-410-003

(8) Install the washers [2] and screws [1] that hold the junction box cover [3].

SUBTASK 32-61-51-400-001

(9) If you found damage to the sensor [6] or the adjacent area during the removal procedure, do these steps:

(a) Repair or replace all damaged components or areas.

NOTE: Damage to the sensor, the target, or the adjacent areas can be an indication of an incorrect sensor clearance.

(b) Measure the sensor [6] clearance, do this task: Nose Landing Gear Down Position Sensor Clearance Measurement, TASK 32-61-51-220-801.

G. Nose Landing Gear Down Position Sensor Installation Test

SUBTASK 32-61-51-220-003

(1) Do this task: Nose Landing Gear Down Position Sensor Clearance Measurement, TASK 32-61-51-220-801.

SUBTASK 32-61-51-860-006

(2) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 32-61-51-720-001

(3) Do this task: Nose Landing Gear Down Position Sensor Operational Test, TASK 32-61-51-710-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR DOWN POSITION SENSOR - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) Nose landing gear down position sensor clearance measurement.

(2) Nose landing gear down position sensor clearance adjustment.

(3) Nose landing gear down position sensor operational test.

B. The procedures for both installations are similar.

TASK 32-61-51-220-801

2. Nose Landing Gear Down Position Sensor Clearance Measurement

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
713	Nose Landing Gear

C. Prepare to Measure the Clearance

SUBTASK 32-61-51-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-51-480-002

(2) Make sure that the chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

D. Measure the Nose Landing Gear Down-and-Locked Sensor Clearance

SUBTASK 32-61-51-220-001

(1) Measure the clearance between the sensor and target.

SUBTASK 32-61-51-820-001

(2) If the sensor clearance is outside the tolerance shown in (Figure 501), do this task: Nose Landing Gear Down Position Sensor Clearance Adjustment, TASK 32-61-51-400-801.

NOTE: Write down the measured clearance so you will know what adjustments must be made.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOSE LANDING GEAR WHEEL WELL

A

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Nose Landing Gear Down Position Sensor Adjustment
Figure 501/32-61-51-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE)

B

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU)

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0845	L
2	S0853	R

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

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Nose Landing Gear Down Position Sensor Adjustment
Figure 501/32-61-51-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(EXAMPLE)

B

PROXIMITY SWITCH ELECTRONICS UNIT (PSEU)

1

SYSTEM NO.	SENSOR NO.	LOCATION
1	S0845	L
2	S0853	R

2 PHYSICAL GAP TOLERANCE

3 PSEU TOLERANCE

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Nose Landing Gear Down Position Sensor Adjustment
Figure 501/32-61-51-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-61-51-400-801

3. Nose Landing Gear Down Position Sensor Clearance Adjustment

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Location Zones

Zone	Area
713	Nose Landing Gear

D. Prepare for the Adjustment

SUBTASK 32-61-51-480-009

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(1) Make sure that the downlock pins are installed on the nose and main landing gear (TASK 32-00-01-480-801).

SUBTASK 32-61-51-480-010

(2) Make sure that chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

E. Nose Landing Gear Down Position Sensor Clearance Adjustment

SUBTASK 32-61-51-010-002

LOM ALL; AIRPLANES WITH STEEL SENSORS

(1) To loosen the sensor from the mounting bracket, remove the nuts [5], bolts [6], and washers [7].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

To loosen the sensor from the mounting bracket, remove the nuts [5], bolts [6], washers [7], and washers [8].

LOM ALL

SUBTASK 32-61-51-020-001

(2) Remove the nuts [4] and washers [3].

SUBTASK 32-61-51-020-002

(3) Remove the target [1] and shims [2].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-51-110-001

(4) Clean the shims and mounting surfaces.

SUBTASK 32-61-51-820-002

(5) Adjust the shims [2] thickness as required to get the necessary sensor to target clearance, do one of the steps that follow:

(a) Remove the laminations from the existing shims [2].

(b) Apply additional shims [2].

1) If it is necessary, remove the laminations from the new shims [2].

(c) Replace the existing shims [2] with the new shims [2] and adjust the thickness.

1) If it is necessary, remove the laminations from the new shims [2].

SUBTASK 32-61-51-620-001

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(6) Apply a thin coat of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces.

(a) Wipe off the excess of compound.

SUBTASK 32-61-51-420-001

(7) Assemble the target assembly.

(a) Position the shims [2] and target [1] on the mounting bracket.

(b) Install the nuts [4] and washers [3].

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

SUBTASK 32-61-51-410-006

(8) Fay seal the bottom of the sensor with sealant, A00247.

LOM ALL

SUBTASK 32-61-51-410-004

(9) Attach the sensor to the mounting bracket.

(a) Put the sensor in its position on the mounting bracket.

WARNING	USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply a thin coat of Cor-Ban 27L Compound, G50237, or corrosion inhibiting material, G50136 (alternate), to the thread reliefs, threads, and washer faces.

1) Wipe off the excess of compound.

LOM ALL; AIRPLANES WITH STEEL SENSORS

(c) Install the washers [7], nuts [5], and bolts [6].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH TITANIUM SENSORS

Install the washers [7], washers [8], nuts [5], and bolts [6].

NOTE: Use CRES washers below bolt heads with titanium sensors. Use cad-plated washers below nuts. CRES washers are optional below bolt heads with stainless steel sensors.

LOM ALL

SUBTASK 32-61-51-220-002

(10) Measure the sensor clearance and compare to the requirement (TASK 32-61-51-220-801).

(a) If the sensor clearance is not correct, do the steps to adjust the sensor clearance again.

SUBTASK 32-61-51-390-001

(11) Seal the shim stack.

(a) Clean the shims.

(b) Apply sealant, A00247, to the shim surfaces.

END OF TASK

TASK 32-61-51-710-801

4. Nose Landing Gear Down Position Sensor Operational Test

(Figure 501)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Operational Test

SUBTASK 32-61-51-480-003

WARNING MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-61-51-480-004

(2) Make sure chocks are installed at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-61-51-860-003

(3) If it is necessary, supply electrical power. To do this, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

E. Operational Test of the Nose Landing Gear Down Position Sensor

SUBTASK 32-61-51-010-001

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-61-51-740-001

(2) Use the PSEU BITE to test the sensor.

(a) Push the ON/OFF switch on the PSEU BITE display.

(b) Push the down arrow until OTHER FUNCTNS? shows.

(c) Push the YES switch to select OTHER FUNCTNS?.

(d) Push the down arrow until SENSOR RIGGING? shows.

(e) Push the YES switch to select SENSOR RIGGING?.

(f) Push the down arrow until the applicable sensor identification shows.

NOTE: See the table in (Figure 501) for the sensor identification and location.

(g) Push the YES switch to select the sensor.

(h) Push the YES switch to select GAP GRAPH? The sensor number and gap display meter will show.

NOTE: You can also display the gap value in MILS (1 MIL equals 1/1000th of an inch) or required changes to the sensor gap. Push on the down arrow or NO switch to show these options.

(i) Make sure the PSEU display shows the sensor clearance within tolerance.

NOTE: For a description of the sensor clearance display see (Figure 501).

F. Return the airplane to its normal configuration

SUBTASK 32-61-51-840-001

(1) Push the ON/OFF switch on the PSEU BITE display to turn off the PSEU BITE.

(a) Push the YES switch to confirm that you want to turn off the display.

SUBTASK 32-61-51-840-002

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 32-61-51-860-004

(3) If it is not necessary, remove electrical power. To do this, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUPPLEMENTAL PROXIMITY SENSOR ELECTRONIC UNIT (SPSEU) - ADJUSTMENT/TEST

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has this task:

(1) A ground test of the SPSEU.

TASK 32-62-00-740-801

2. Supplemental Proximity Sensor Electronic Unit (SPSEU) BITE Test - Ground Test

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
24-22-00-860-813	Supply External Power (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
36-00-00-860-806	Remove Pressure from the Pneumatic System (P/B 201)
52-11-00 P/B 201	FORWARD ENTRY DOOR - MAINTENANCE PRACTICES
52-13-00 P/B 201	AFT ENTRY DOOR - MAINTENANCE PRACTICES
52-41-00 P/B 201	GALLEY SERVICE DOORS - MAINTENANCE PRACTICES

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Prepare for the Test

SUBTASK 32-62-00-860-002

(1) Do this task: Supply External Power, TASK 24-22-00-860-813.

SUBTASK 32-62-00-840-001

(2) Make sure there is no hydraulic pressure on the airplane. If there is hydraulic pressure, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-62-00-840-002

(3) Make sure chocks are installed on the nose and main landing gear (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-62-00-840-003

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-62-00-860-001

(5) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-62-00-010-001

(6) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-62-00-010-002

(7) Loosen the fasteners on the cardfile door of the J23 Box.

SUBTASK 32-62-00-010-003

(8) Open the cardfile door on the J23 Box.

SUBTASK 32-62-00-410-010

(9) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

E. Discrete Input Default Position Test

SUBTASK 32-62-00-860-003

(1) Put the airplane in the Air Mode with the PSEU BITE (TASK 32-09-00-860-801).

SUBTASK 32-62-00-860-016

(2) Make sure the Landing Gear Lever is in the down position.

SUBTASK 32-62-00-860-017

(3) Retract the Thrust Levers to the idle position.

SUBTASK 32-62-00-860-018

(4) Make sure the Engine Start Levers are in the cutoff position.

SUBTASK 32-62-00-740-002

(5) From the SPSEU-1 Front Panel, press the TEST button for 5 seconds.

(a) Make sure 0 shows on the single-character display.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) If a 0 does not show on the display then do this task: SPSEU BITE PROCEDURE, FIM 32-62 TASK 801

SUBTASK 32-62-00-860-004

(6) Return the airplane to the Ground Mode with the PSEU BITE (TASK 32-09-00-860-802).

F. Discrete Input Non-Default Position Test

SUBTASK 32-62-00-410-008

(1) Close and lock these doors:

- Forward Entry Door, FORWARD ENTRY DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-11-00/201.
- Aft Entry Door, AFT ENTRY DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-13-00/201.
- Forward and Aft Service Doors, GALLEY SERVICE DOORS - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-00/201.

SUBTASK 32-62-00-410-009

(2) Do these steps to simulate the operation of the engines:

(a) Make sure that there is no pneumatic power to the engine starters.

1) If it is necessary, Remove Pressure from the Pneumatic System, TASK 36-00-00-860-806.

(b) Make sure that the two thrust levers, found on the Control Stand P8, are in the Idle position.

(c) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1

(d) Make sure that the start switches for the two engines are in the OFF or AUTO position.

(e) Make sure that the engines do not start while you do this step:

NOTE: The circuit breakers that you opened prevent the engine start. If you have an engine start, then stop it immediately.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-62-00-860-005

(3) Advance the Engine 1 and 2 Start Levers to the Idle position, and wait 5 minutes.

SUBTASK 32-62-00-860-006

WARNING	OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. WHEN YOU MOVE THE THRUST LEVER FORWARD, THE WEATHER RADAR SYSTEM COMES ON AUTOMATICALLY WHILE THE CIRCUIT BREAKER IS CLOSED. MAKE SURE THAT ALL PERSONNEL ARE MORE THAN 15 FT (5 M) FROM THE ANTENNA WHEN IT TRANSMITS RF ENERGY. RF ENERGY CAN KILL OR CAUSE INJURIES TO PERSONS, AND CAUSE DAMAGE TO EQUIPMENT.

(4) Advance the Engine 1 and 2 Forward Thrust Levers to the maximum thrust position.

SUBTASK 32-62-00-860-007

(5) Move the landing gear lever to the OFF position.

SUBTASK 32-62-00-860-008

(6) From the AACU, set the right outboard wheel speed to more than 60 knots.

(a) Move the BRAKE TEST selector switch to 4.

(b) Press the ENABLE/VERIFY button and move the toggle switch to the PRESS/TEST position.

NOTE: Hold ENABLE/VERIFY and PRESS/TEST switches down while you do the subsequent SPSEU tests.

SUBTASK 32-62-00-740-003

(7) From the SPSEU-1 Front Panel, press the TEST and DISPLAY FAULT buttons simultaneously for 5 seconds.

(a) Make sure 0 shows on the single-character display.

1) If a 0 does not show on the display then do this task: SPSEU BITE PROCEDURE, FIM 32-62 TASK 801

SUBTASK 32-62-00-860-009

(8) From the AACU, restore the right outboard wheel speed to 0 knots.

(a) Release the ENABLE/VERIFY and PRESS/TEST buttons.

(b) Move the BRAKE TEST selector switch to the NORM position.

SUBTASK 32-62-00-860-010

(9) Move the landing gear lever to the DN position.

SUBTASK 32-62-00-860-011

(10) Return the Engine 1 and 2 Forward Thrust Levers to the idle stop position.

SUBTASK 32-62-00-860-012

(11) Return the Engine 1 and 2 Start Levers to the cutoff position.

G. Display Faults

SUBTASK 32-62-00-740-001

(1) If the display is not off, allow the display to turn off automatically before pressing the DISPLAY FAULT button on the SPSEU-1 and SPSEU-2 Front Panel.

(a) Make sure 0 shows on the single-character display.

NOTE: Make sure that the display is off before you push the DISPLAY FAULT button. This will make sure that the SPSEU is out of GROUND MODE and in its Usual Condition.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-62-00-865-001

(1) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1

SUBTASK 32-62-00-010-008

(2) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 32-62-00-410-001

(3) Close the cardfile door on the J23 Box.

SUBTASK 32-62-00-410-002

(4) Tighten the fasteners on the cardfile door of the J23 Box.

SUBTASK 32-62-00-410-003

(5) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Supplemental Proximity Sensor Electronic Unit (SPSEU) BITE Test
Figure 501/32-62-00-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUPPLEMENTAL PROXIMITY SENSOR ELECTRONIC UNIT (SPSEU) CARD - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the Supplemental Proximity Sensor Electronic Unit (SPSEU) Card.

(2) Installation of the Supplemental Proximity Sensor Electronic Unit (SPSEU) Card.

TASK 32-62-01-000-801

2. Supplemental Proximity Sensor Electronic Unit (SPSEU) Card Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-802	Printed Circuit Card Removal (P/B 201)
20-40-12-000-801	ESDS Handling for Printed Circuit Board Removal (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Prepare for the Removal

SUBTASK 32-62-01-860-001

(1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-62-01-010-001

(2) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

E. Remove the Card

SUBTASK 32-62-01-010-002

(1) Loosen the fasteners on the cardfile door of the J23 Box.

SUBTASK 32-62-01-010-003

(2) Open the cardfile door on the J23 Box.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-62-01-860-002

CAUTION	DO NOT TOUCH THE SPSEU CARD BEFORE YOU DO THE PROCEDURE FOR THE DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. AN ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SPSEU CARD.

(3) Do this task: ESDS Handling for Printed Circuit Board Removal, TASK 20-40-12-000-801.

SUBTASK 32-62-01-020-001

(4) To remove the SPSEU Card [1], do this task: Printed Circuit Card Removal, TASK 20-10-07-000-802.

NOTE: A diagram of the card positions is on the inner side of the door.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Supplemental Proximity Sensor Electronic Unit (SPSEU) Card Installation
Figure 401/32-62-01-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-62-01-400-801

3. Supplemental Proximity Sensor Electronic Unit (SPSEU) Card Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-802	Printed Circuit Card Installation (P/B 201)
20-40-12-400-801	ESDS Handling for Printed Circuit Board Installation (P/B 201)
32-62-00-740-801	Supplemental Proximity Sensor Electronic Unit (SPSEU) BITE Test - Ground Test (P/B 501)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Install the Card

SUBTASK 32-62-01-860-003

> **CAUTION** DO NOT TOUCH THE SPSEU CARD BEFORE YOU DO THE PROCEDURE FOR THE DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. AN ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SPSEU CARD.

(1) Do this task: ESDS Handling for Printed Circuit Board Installation, TASK 20-40-12-400-801.

SUBTASK 32-62-01-420-001

(2) To install the SPSEU Card [1], do this task: Printed Circuit Card Installation, TASK 20-10-07-400-802.

SUBTASK 32-62-01-410-001

(3) Close the cardfile door on the J23 Box.

SUBTASK 32-62-01-410-002

(4) Tighten the fasteners on the cardfile door of the J23 Box.

E. SPSEU Installation Test

SUBTASK 32-62-01-860-004

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-62-01-700-001

(2) Do this task: Supplemental Proximity Sensor Electronic Unit (SPSEU) BITE Test - Ground Test, TASK 32-62-00-740-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-62-01-410-003

(1) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID ASSEMBLY - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

LOM 465-999

(1) Two Position Tail Skid Assembly - Deactivation

(2) Two Position Tail Skid Assembly - Activation

(3) Replacement of the tail skid cartridge core assembly.

LOM ALL

(4) Replacement of the tail skid shoe.

(5) Replacement of the tail skid warning decal.

LOM 465-999

TASK 32-71-00-800-801

2. Two Position Tail Skid Assembly - Deactivation

(Figure 201 or Figure 202)

A. General

(1) This task will deactivate these components in the two position tail skid assembly.

- Tail Skid Hydraulic Actuator
- Tail Skid Link Assembly

B. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205
STD-858	Tag - DO NOT OPERATE
STD-3731	Streamer - REMOVE BEFORE FLIGHT

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

(Continued)

Number	Name/Location
311BL	Stabilizer Trim Access Door

F. Procedure

SUBTASK 32-71-00-010-015

(1) Open these access panels:

Number	Name/Location
117A	Electronic Equipment Access Door
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-00-480-021

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear, do this task: (Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801).

SUBTASK 32-71-00-480-022

(3) Install the DO NOT OPERATE tag, STD-858 on the control lever for the landing gear.

SUBTASK 32-71-00-860-010

(4) For the hydraulic system A, do this task: (Hydraulic System A or B Power Removal, TASK 29-11-00-860-805).

SUBTASK 32-71-00-860-011

(5) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-71-00-480-023

(6) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-480-024

(7) Do these steps to install the downlock pin:

NOTE: The tail skid can be locked in either the retracted position or the extended position.

> **WARNING** DO NOT TOUCH THE DUCT FOR APU BLEED AIR WHEN YOU INSTALL THE LOCKOUT PIN FOR THE TAIL SKID. IT GETS VERY HOT. HOT DUCTS CAN BURN YOU.

(a) Install the tail skid lockout pin, SPL-6254 in the lock links for the tail skid.

NOTE: If the tail skid lockout pin, SPL-6254 will not go into the lock links, it is possible that an adjustment of the lock links is necessary.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

1) When the tail skid is in the retracted position, the lockout pin is installed from the right to the left from inside the aft unpressurized compartment.
2) When the tail skid is in the extended position, the lockout pin is installed from the left to the right by reaching between the drag lever skirt and the fairing.

   NOTE: It is not necessary to remove the fairing to install the tail skid lockout pin, SPL-6254 when the tail skid is in the extended position.
3) Make sure that the REMOVE BEFORE FLIGHT streamer, STD-3731 is extended and can be easily seen from the ground.

G. Tryout

SUBTASK 32-71-00-860-013

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) Set the tailskid extend switch, located on the front face of the J23 box, to the EXTEND position.
   (a) Make sure that the tail skid does not move.

(2) Set the tailskid extend switch, located on the front face of the J23 box, to the RETRACT position.
   (a) Make sure that the tail skid does not move.

   NOTE: If the tail skid does not move when the relay switch is activated then the tail skid is deactivated.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Tail Skid Downlock Pin
Figure 201/32-71-00-990-811 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID LOCK LINKS

B

J68732 S0000174523_V3

Tail Skid Downlock Pin
Figure 201/32-71-00-990-811 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U77864 S0000217026_V3

Tail Skid Downlock Pin
Figure 201/32-71-00-990-811 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tailskid Extend Switch
Figure 202/32-71-00-990-812

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-00-800-802

3. **Two Position Tail Skid Assembly - Activation**
(Figure 201 or Figure 202)

A. **General**

(1) This task will activate these components in the two position tail skid assembly.

- Tail Skid Hydraulic Actuator
- Tail Skid Link Assembly

B. **References**

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)

C. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205
STD-858	Tag - DO NOT OPERATE

D. **Location Zones**

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. **Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door
311BL	Stabilizer Trim Access Door

F. **Procedure**

SUBTASK 32-71-00-480-025

(1) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-080-001

WARNING DO NOT TOUCH THE DUCT FOR APU BLEED AIR WHEN YOU INSTALL THE LOCKOUT PIN FOR THE TAIL SKID. IT GETS VERY HOT. HOT DUCTS CAN BURN YOU.

(2) Remove the tail skid lockout pin, SPL-6254 from the lock links for the tail skid.

SUBTASK 32-71-00-080-002

(3) Remove the DO NOT OPERATE tag, STD-858 on the control lever for the landing gear.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-71-00-860-015

(4) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-71-00-410-013

(5) Close these access panels:

Number	Name/Location
117A	Electronic Equipment Access Door
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-00-080-003

(6) Remove the downlock pins installed in the nose and main landing gear, do this task: (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

——— END OF TASK ———

TASK 32-71-00-960-801

4. Replacement of the Tail Skid Cartridge Core Assembly

(Figure 203)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
SRM 51-40-04	Structural Repair Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Core assembly	32-71-00-05-085	LOM 465-999
		32-71-11-01-070	LOM 465-999
5	Male telescoping rod assembly	32-71-11-01-055	LOM 465-999
6	Female telescoping rod assembly	32-71-11-01-040	LOM 465-999

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

F. Tail Skid Cartridge Core Assembly Replacement

SUBTASK 32-71-00-480-019

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-867-003

(2) If the tail skid has not already been extended, extend it now.

NOTE: The tail skid needs to be in the extended position when you do this task.

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(b) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tail Skid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(f) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(g) Install the tail skid lockout pin, SPL-6254, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-010-013

(3) Disconnect and lower the fairing [7]:

NOTE: If it is possible to access the bolts [8] for the male telescoping rod assembly [5] and female telescoping rod assembly [6], then it may not be necessary to disconnect and lower the fairing [7].

(a) Hold the fairing [7] in its location.

(b) Remove the bolts [8] that hold the fairing [7] to the body of the airplane.

(c) Lower the fairing [7] so it is resting on the drag lever.

SUBTASK 32-71-00-000-005

(4) Remove and discard the core assembly [1].

(a) Remove the bolts [2], washers [3], and nuts [4] that hold the male telescoping rod assembly [5] to the core assembly [1].

(b) Remove the male telescoping rod assembly [5] from the core assembly [1].

(c) Remove the bolts [2], washers [3], and nuts [4]that hold the female telescoping rod assembly [6] to the core assembly [1].

(d) Remove the female telescoping rod assembly [6] from the core assembly [1].

(e) Discard the used core assembly [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-71-00-200-001

> **CAUTION** DISCARD TAIL SKID PARTS IF THEY ARE DAMAGED. IF YOU USE A PART THAT IS DAMAGED, THE TAIL SKID WILL NOT OPERATE CORRECTLY. THIS CAN CAUSE DAMAGE TO THE AIRCRAFT.

(5) Inspect the male telescoping rod assembly [5] and female telescoping rod assembly [6]:

(a) Visually inspect the male telescoping rod assembly [5]and female telescoping rod assembly [6] to verify that they have not been damaged and meet the drawing dimensional requirements.

(b) Make sure that the male telescoping rod assembly [5]and female telescoping rod assembly [6] halves slide together freely.

SUBTASK 32-71-00-400-001

(6) Install new core assembly [1]:

(a) Assemble the female telescoping rod assembly [6] to the core assembly [1].

(b) Install bolts [2], washers [3], and nuts [4] wet with sealant, A00247 and torque to 25-35 in-lbs per SRM 51-40-04.

(c) Assemble the male telescoping rod assembly [5] to the core assembly [1].

(d) Install bolts [2], washers [3], and nuts [4] wet with sealant, A00247 and torque to 25-35 in-lbs per SRM 51-40-04.

SUBTASK 32-71-00-410-011

(7) Install the fairing [7]:

(a) Put the fairing [7] in its location on the airplane.

(b) Install the bolts [8] that hold the fairing [7] to the body of the airplane.

SUBTASK 32-71-00-867-004

(8) Retract the tail skid.

(a) Remove the tail skid lockout pin, SPL-6254, from the lock links for the tail skid if it is installed (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

(b) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(c) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

WARNING	DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the tail skid extend switch, located on the front face of the J23 Box, to the RETRACT position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U78495 S0000216221_V3

Replacement of Tail Skid Cartridge Core Assembly
Figure 203/32-71-00-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL

TASK 32-71-00-960-802

5. Replacement of the Tail Skid Shoe.

(Figure 204)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
12	Shoe	32-71-00-01-005	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464
		32-71-00-05-005	LOM 465-999

D. Tail Skid Shoe Replacement

SUBTASK 32-71-00-480-020

WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear and tail skid, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-020-016

(2) Remove and discard the shoe [12]:

(a) Remove the bolts [11] that hold the shoe [12] to the skirt and drag lever.

(b) Remove the shoe [12] from the skirt.

SUBTASK 32-71-00-420-017

(3) Install the new shoe [12]:

(a) Put the new shoe [12] in its position on the skirt.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464

(b) From the outer side of the new shoe [12], put grease, D00633, into the holes of the new shoe [12].

LOM ALL

(c) Put the new bolts [11] through the new shoe [12], skirt, and into the drag lever.

(d) Tighten the new bolts [11].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U80612 S0000216360_V3

Replacement of the Tailskid Shoe
Figure 204/32-71-00-990-810 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2883144 S0000683413_V1

Replacement of the Tailskid Shoe
Figure 204/32-71-00-990-810 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-00-960-803

6. Replacement of the Tail Skid Warning Decal

(Figure 205)

A. References

Reference	Title
20-10-11-400-801	Pressure-Sensitive Decal Installation (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

C. Tail Skid Warning Decal Replacement.

SUBTASK 32-71-00-480-026

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear and tail skid, do this task Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-020-018

(2) If it is necessary, remove the shoe [12]:
   (a) Remove four bolts [11] that hold the shoe [12] to the skirt [10] and the drag lever [9].
   (b) Remove the shoe [12] from the skirt [10].

SUBTASK 32-71-00-020-019

(3) If it is necessary, remove the skirt [10]:
   (a) Remove the bolts [14] that hold the skirt [10] to the drag lever [9].
   (b) Remove the skirt [10] from the drag lever [9].

SUBTASK 32-71-00-910-001

(4) Install new tail skid warning decal [13]:
   (a) Do this task: Pressure-Sensitive Decal Installation, TASK 20-10-11-400-801.
   (b) Make sure that the tail skid warning decal [13] is installed with the upper edge of decal in line with the fairing, or as shown in Figure 205.

SUBTASK 32-71-00-420-018

(5) If removed, install the skirt [10]:
   (a) Put the skirt [10] in its position on the drag lever [9].
   (b) From the outer side of the skirt [10], put grease, D00633 into the holes of the skirt [10].
   (c) Put the bolts [14] through the skirt [10] into drag lever [9].
   (d) Tighten the bolts [14].

SUBTASK 32-71-00-420-019

(6) If removed, install the shoe [12]:
   (a) Put the shoe [12] in its position on the skirt [10].
   (b) From the outer side of the shoe [12], put grease, D00633 into the holes of the shoe [12].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Put the four bolts [11] through the shoe [12], skirt [10], and into the drag lever [9].

(d) Tighten the bolts [11].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

1 LOCATE GREEN EDGE OF THE DECAL IN LINE WITH FAIRING OML APPROX STA 1088

2478652 S0000581954_V2

Tail Skid Warning Decal Installation
Figure 205/32-71-00-990-813

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the drag lever

(2) An installation of the drag lever

(3) A removal of the cartridge assembly

(4) An installation of the cartridge assembly

TASK 32-71-00-000-801

2. Drag Lever Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

C. Drag Lever Removal

SUBTASK 32-71-00-480-009

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task:Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-490-004

(2) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-030-004

(3) Remove the shoe [6]:

(a) Remove the bolts [7] that hold the shoe [6] to the skirt [5] and the drag lever [1].

(b) Remove the shoe [6] from the skirt [5].

SUBTASK 32-71-00-030-005

(4) Remove the skirt [5]:

(a) Remove the bolts [8] that hold the skirt [5] to the drag lever [1].

(b) Remove the skirt [5] from the drag lever [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-71-00-030-006

CAUTION	MAKE SURE THAT THE DRAG LEVER DOES NOT MOVE DOWN QUICKLY WHEN YOU DISCONNECT THE PIN ASSEMBLY. THE PIN ASSEMBLY THAT YOU REMOVE HOLDS THE DRAG LEVER IN ITS POSITION. THE DRAG LEVER CAN CAUSE DAMAGE IF IT HITS THE AIRPLANE.

(5) Disconnect the cartridge assembly [2] from the drag lever [1]:

(a) Remove the nut [16], and washer [17] from the bolt [15].

(b) Remove the bolt [15], washer [18].

(c) Disconnect the cartridge assembly [2] from the drag lever [1].

(d) Slowly lower the drag lever [1].

SUBTASK 32-71-00-030-007

(6) Disconnect the lanyard [14]:

(a) Remove the nuts [3], and washers [4] from the u-bolt [13].

(b) Remove the u-bolt [13] to disconnect the lanyard [14] from the drag lever [1].

SUBTASK 32-71-00-020-010

(7) Disconnect the drag lever [1] from the tailskid support fitting:

(a) Remove the nuts [11], and washers [10] from the bolts [12].

(b) Remove the bolts [12], and washers [9] that hold the forward side of the drag lever [1] to the tailskid support fitting.

(c) Remove the drag lever [1] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tailskid Installation
Figure 401/32-71-00-990-805 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tailskid Installation
Figure 401/32-71-00-990-805 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-00-400-801

3. Drag Lever Installation

(Figure 401)

A. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Cartridge assembly	32-71-00-01-095	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464

C. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

D. Drag Lever Installation

SUBTASK 32-71-00-490-005

(1) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-420-002

(2) Connect the forward end of the drag lever [1] to the tailskid support fitting:

(a) Align the hole in the forward end of the drag lever [1] to the hole in the tailskid support fitting.

(b) Install the washers [9] on the bolts [12].

(c) Put the bolts [12] through the tailskid support fitting, and the drag lever [1].

(d) Install the washers [10], and the nuts [11] on the bolts [12].

NOTE: Do not tighten the nuts [11].

(e) Move the drag lever [1] to the left until the left spherical bearing is against the outboard lug of the tailskid support fitting.

(f) Make sure there is a minimum clearance of 0.0400 inch (1.016 millimeter) between the lug on the drag lever [1], and the inboard lug on the right support fitting.

(g) Move the drag lever [1] to the right until the right spherical bearing is against the outboard lug of the tailskid support fitting.

(h) Make sure there is a minimum clearance of 0.0400 inch (1.016 millimeter) between the lug on the drag lever [1], and the inboard lug on the left support fitting.

(i) Tighten the nuts [11].

(j) Make sure there is a minimum clearance of 0.0100 inch (0.254 millimeter) between the inboard lug on the left support fitting, and the washer [10].

SUBTASK 32-71-00-420-003

(3) Connect the lanyard [14]:

(a) Examine the lanyard [14] for dirt and damage.

(b) Put the u-bolt [13] in its position on the drag lever [1].

(c) Install the washers [4], and the nuts [3] on the u-bolt [13].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Tighten the nuts [3].

SUBTASK 32-71-00-420-012

(4) Connect the cartridge assembly [2] to the drag lever [1]:

(a) Align the male telescope rod side of the cartridge assembly [2] to the drag lever [1].

(b) Install the washer [18] on the bolt [15].

(c) Put the bolt [15] through the drag lever [1], and the male telescope rod side of the cartridge assembly [2].

(d) Install the washer [17], and the nut [16] on the bolt [15].

(e) Make sure there is a minimum clearance of 0.0100 inch (0.254 millimeter) between the inboard lug on the drag lever [1], and the washer [17].

(f) Tighten the nut [16].

SUBTASK 32-71-00-420-005

(5) Install the skirt [5]:

(a) Put the skirt [5] in its position on the drag lever [1].

(b) Install the bolts [8] that hold the skirt [5] to the drag lever [1].

SUBTASK 32-71-00-420-006

(6) Install the shoe [6]:

(a) Put the shoe [6] in its position on the skirt [5].

(b) From the outer side of the shoe [6], put grease, D00633 into the holes of the shoe [6].

(c) Put the bolts [7] through the shoe [6], skirt [5], and into the drag lever [1].

(d) Tighten the bolts [7].

END OF TASK

TASK 32-71-00-000-802

4. Cartridge Assembly Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

C. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Cartridge Assembly Removal

SUBTASK 32-71-00-480-013

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-490-002

(2) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-000-003

(3) To access the lower attach point of the cartridge assembly [2] do this:

(a) Remove the bolts [7] and shoe [6] from the skirt [5].

(b) Remove the bolts [8] and skirt [5] from the drag lever [1].

SUBTASK 32-71-00-010-002

(4) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-00-020-005

> **CAUTION** MAKE SURE THAT THE DRAG LEVER DOES NOT MOVE DOWN QUICKLY WHEN YOU DISCONNECT THE PIN ASSEMBLY. THE PIN ASSEMBLY THAT YOU REMOVE HOLDS THE DRAG LEVER IN ITS POSITION. THE DRAG LEVER CAN CAUSE DAMAGE IF IT HITS THE AIRPLANE.

(5) Disconnect the cartridge assembly [2] from the drag lever [1]:

(a) Remove the nut [16] and washer [17] from the bolt [15].

(b) Remove the bolt [15] that holds the male telescope rod side of the cartridge assembly [2] to the drag lever [1].

(c) Remove the washer [18] from the bolt [15].

SUBTASK 32-71-00-020-004

(6) Disconnect the cartridge assembly [2] from the pivot linkage:

(a) Remove the nut [20], and the washer [21] from the bolt [19].

(b) Remove the bolt [19] that holds the female telescope rod side of the cartridge assembly [2] to the pivot linkage.

(c) Remove the washer [22] from the bolt [19].

(d) Remove the cartridge assembly [2] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-00-400-802

5. Cartridge Assembly Installation

(Figure 401)

A. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Cartridge assembly	32-71-00-01-095	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464

C. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

D. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

E. Cartridge Assembly Installation

SUBTASK 32-71-00-490-003

(1) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-420-007

(2) Connect the cartridge assembly [2] to the drag lever [1]:

(a) Align the male telescope rod side of the cartridge assembly [2] to the drag lever [1].

(b) Install the washer [18] on the bolt [15].

(c) Put the bolt [15] through the drag lever [1], and the male telescope rod side of the cartridge assembly [2].

(d) Install the washer [17], and the nut [16] on the bolt [15].

(e) Make sure there is a minimum clearance of 0.0100 inch (0.254 millimeter) between the inboard lug on the drag lever [1], and the washer [17].

(f) Tighten the nut [16].

SUBTASK 32-71-00-420-008

(3) Connect the cartridge assembly [2] to the pivot linkage:

(a) Align the female telescope rod side of the cartridge assembly [2] to the hole in the pivot linkage.

(b) Install the washer [22] on the bolt [19].

(c) Put the bolt [19] through the pivot linkage, and the female telescope rod side of the cartridge assembly [2].

(d) Install the washer [21], and the nut [20] on the bolt [19].

(e) Make sure there is a minimum clearance of 0.0100 inch (0.254 millimeter) between the inboard lug on the pivot linkage, and the washer [21].

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(f) Tighten the nut [20].

SUBTASK 32-71-00-420-009

(4) Install the skirt [5]:

(a) Put the skirt [5] in its position on the drag lever [1].

(b) Install the bolts [8] that hold the skirt [5] to the drag lever [1].

SUBTASK 32-71-00-420-010

(5) Install the shoe [6]:

(a) Put the shoe [6] in its position on the skirt [5].

(b) From the outer side of the shoe [6], put grease, D00633 into the holes of the shoe [6].

(c) Put the bolts [7] through the shoe [6], skirt [5], and the drag lever [1].

(d) Tighten the bolts [7].

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-71-00-410-003

(1) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TWO POSITION TAIL SKID ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the drag lever

(2) An installation of the drag lever

(3) A removal of the cartridge assembly

(4) An installation of the cartridge assembly

TASK 32-71-00-000-809

2. Drag Lever Removal

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Drag Lever Removal

SUBTASK 32-71-00-480-018

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-490-008

(2) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-867-005

(3) If the tail skid has not already been extended, extend it now.

NOTE: The tail skid needs to be in the extended position when you do this task.

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(b) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(f) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(g) Install the retractable tail skid lockout pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-010-014

(4) Disconnect and lower the fairing [1]:

(a) Hold the fairing [1] in its location.

(b) Remove the bolts [8] that hold the fairing [1] to the body of the airplane.

(c) Lower the fairing [1] so it is resting on the drag lever.

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SUBTASK 32-71-00-020-014

(5) Remove the shoe [5]:

(a) Remove the bolts [6] that hold the shoe [5] to the skirt [4] and the drag lever [2].

(b) Remove the shoe [5] from the skirt [4].

SUBTASK 32-71-00-020-012

(6) Remove the skirt [4]:

(a) Remove the bolts [7] that hold the skirt [4] to the drag lever [2].

(b) Remove the skirt [4] from the drag lever [2].

SUBTASK 32-71-00-030-008

CAUTION	MAKE SURE THAT THE DRAG LEVER DOES NOT MOVE DOWN QUICKLY WHEN YOU DISCONNECT THE PIN ASSEMBLY. THE PIN ASSEMBLY THAT YOU REMOVE HOLDS THE DRAG LEVER IN ITS POSITION. THE DRAG LEVER CAN CAUSE DAMAGE IF IT HITS THE AIRPLANE.

(7) Disconnect the cartridge assembly [3] from the drag lever [2]:

(a) Remove the cotter pin [19], nut [18], and washer [17] from the bolt [14].

(b) Remove the bolt [14], washer [15], and end caps [13] from the fuse pin [16].

(c) Hold the drag lever [2].

(d) Remove the fuse pin [16] from the cartridge assembly [3] and drag lever [2].

(e) Lower the drag lever [2].

SUBTASK 32-71-00-020-013

(8) Disconnect the drag lever [2] from the tail skid support fitting:

(a) Remove the cotter pins [10], nuts [11], and washers [9] from the bolts [12].

(b) Hold the drag lever [2].

(c) Remove the bolts [12] from the drag lever [2] and tail skid support fitting.

(d) Remove the drag lever [2] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tail Skid Installation
Figure 401/32-71-00-990-809 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tail Skid Installation
Figure 401/32-71-00-990-809 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-00-400-806

3. Drag Lever Installation

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-71-00-710-801	Tail Skid Assembly Operational Test (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Cartridge assembly	32-71-00-05-085	LOM 465-999
16	Fuse pin	32-71-00-05-175	LOM 465-999

E. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

F. Drag Lever Installation

SUBTASK 32-71-00-490-009

(1) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-420-020-001

(2) Install the fairing [1]:

(a) Put the fairing [1] in its location on the airplane.

(b) Install the bolts [8] that hold the fairing [1] to the body of the airplane.

SUBTASK 32-71-00-420-013

(3) Connect the forward end of the drag lever [2] to the tailskid support fitting:

(a) Align the hole in the forward end of thedrag lever [2] to the hole in the tailskid support fitting.

(b) Put the bolts [12] through the tailskid support fitting, and the drag lever [2].

(c) Install the washer [9], and the nuts [11] on the bolts [12].

(d) Torque the nuts [11] to 175 ±15 in-lb (20 ±2 N·m).

(e) Back the nuts [11] off to the nearest castellation and install the cotter pins [10].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 32-71-00-430-001

(4) Connect the cartridge assembly [3] to the drag lever [2]:

(a) Align the male telescope rod side of the cartridge assembly [3] to the drag lever [2].

(b) Install the fuse pin [16] to connect the cartridge assembly [3] to the drag lever [2].

(c) Install the end caps [13], washer [15], and bolt [14] on the fuse pin [16].

(d) Install the washer [17], and the nut [18] on the bolt [14].

(e) Torque the nut [18] to 22 ±2 in-lb (2 ±1 N·m) above the run on torque.

(f) Back the nut [18] off to the nearest castellation and install the cotter pin [19].

SUBTASK 32-71-00-420-014

(5) Install the skirt [4]:

(a) Put the skirt [4] in its position on the drag lever [2].

(b) Install the bolts [7] that hold the skirt [4] to the drag lever [2].

SUBTASK 32-71-00-420-015

(6) Install the shoe [5]:

(a) Put the shoe [5] in its position on the skirt [4].

(b) From the outer side of the shoe [5], put grease, D00633 into the holes of the shoe [5].

(c) Put the bolts [6] through the shoe [5], skirt [4], and into the drag lever [2].

(d) Tighten the bolts [7].

SUBTASK 32-71-00-867-006

(7) Retract the tailskid.

(a) Remove the tail skid lockout pin, SPL-6254, from the lock links for the tail skid if it is installed (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(c) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the RETRACT position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-71-00-710-005

(8) Do the Tail Skid Assembly Operational Test, TASK 32-71-00-710-801.

END OF TASK

TASK 32-71-00-000-810

4. Cartridge Assembly Removal

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Cartridge Assembly Removal

SUBTASK 32-71-00-480-015

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-480-016

(2) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-860-009

(3) If the tail skid has not already been extended, extend it now.

NOTE: The tail skid needs to be in the extended position when you do this task.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(b) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

WARNING DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(f) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(g) Install the retractable tailskid lockout pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-010-012

(4) Disconnect and lower the fairing [1]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Hold the fairing [1] in its location.

(b) Remove the bolts [8] that hold the fairing [1] to the body of the airplane.

(c) Lower the fairing [1] so it is resting on the drag lever.

SUBTASK 32-71-00-030-009

(5) To access the lower attach point of the cartridge assembly [3] do this:

(a) Remove the bolts [6] and shoe [5] from the skirt [4].

(b) Remove the bolts [7] and skirt [4] from the drag lever [2].

SUBTASK 32-71-00-030-010

CAUTION	MAKE SURE THAT THE DRAG LEVER DOES NOT MOVE DOWN QUICKLY WHEN YOU DISCONNECT THE PIN ASSEMBLY. THE PIN ASSEMBLY THAT YOU REMOVE HOLDS THE DRAG LEVER IN ITS POSITION. THE DRAG LEVER CAN CAUSE DAMAGE IF IT HITS THE AIRPLANE.

(6) Disconnect the cartridge assembly [3] from the drag lever [2]:

(a) Remove the cotter pin [19], nut [18], and washer [17] from the bolt [14].

(b) Remove the bolt [14], washer [15], and end caps [13] from the fuse pin [16].

(c) Hold the drag lever [2].

(d) Remove the fuse pin [16] to disconnect the cartridge assembly [3] from the drag lever [2].

(e) Slowly lower the drag lever [2].

SUBTASK 32-71-00-020-015

(7) Do these steps to disconnect the cartridge assembly [3] from the aft lock link [20] and the upper link [21]:

(a) Remove the cotter pin [26], nut [27], and washer [25] from the bolt [24].

(b) Remove the bolt [24], washer [23], and end caps [28] from the pin [22].

(c) Hold the cartridge assembly [3].

(d) Remove the pin [22] to disconnect the cartridge assembly [3] from the aft lock link [20] and upper link [21].

(e) Remove the cartridge assembly [3] from the airplane.

——— END OF TASK ———

TASK 32-71-00-400-807

5. Cartridge Assembly Installation

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-71-00-710-801	Tail Skid Assembly Operational Test (P/B 501)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
D00633	Grease - Aircraft General Purpose	BMS3-33

D. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

E. Cartridge Assembly Installation

NOTE: Make sure that the fairing [1] rests on the drag lever [2] before cartridge assembly [3] installation.

SUBTASK 32-71-00-490-010

(1) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-420-016

(2) Connect the cartridge assembly [3] to the drag lever [2]:

(a) Align the male telescope rod side of the cartridge assembly [3] to the drag lever [2].

(b) Install the fuse pin [16] to connect the cartridge assembly [3] to the drag lever [2].

(c) Install the end caps [13], washer [15], and bolt [14] on the fuse pin [16].

(d) Install the washer [17], and nut [18] on the bolt [14].

(e) Torque the nut [18] to 22 ±2 in-lb (2 ±1 N·m) above the run on torque.

(f) Back the nut [18] off to the nearest castellation and install the cotter pin [19].

SUBTASK 32-71-00-430-003

(3) Do these steps to connect the cartridge assembly [3] to the aft lock link [20] and the upper link [21]:

(a) Put the upper end of the cartridge assembly [3] in its position in the lugs of the upper link [21].

(b) Put the upper end of the cartridge assembly [3] and the upper link [21] in their position in the lugs of the aft lock link [20].

(c) Install the pin [22] to connect the cartridge assembly [3] to the aft lock link [20] and upper link [21].

(d) Install the end caps [28], the washer [23], and bolt [24] on the pin [22].

(e) Install the washer [25] and nut [27] on the bolt [24].

(f) Torque the nut [27] to 22 ±2 in-lb (2 ±1 N·m) above the run on torque.

(g) Back the nut [27] off to the nearest castellation and install the cotter pin [26].

SUBTASK 32-71-00-430-004

(4) Install the skirt [4]:

(a) Put the skirt [4] in its position on the drag lever [2].

(b) Install the bolts [7] that hold the skirt [4] to the drag lever [2].

SUBTASK 32-71-00-430-005

(5) Install the shoe [5]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Put the shoe [5] in its position on the skirt [4].

(b) From the outer side of the shoe [5], put grease, D00633 into the holes of the shoe [5].

(c) Put the bolts [6] through the shoe [5], skirt [4], and the drag lever [2].

(d) Tighten the bolts [6].

SUBTASK 32-71-00-710-006

(6) Do the Tail Skid Assembly Operational Test, TASK 32-71-00-710-801.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-71-00-410-010

(1) Install the fairing [1]:

(a) Put the fairing [1] in its location on the airplane.

(b) Install the bolts [8] that hold the fairing [1] to the body of the airplane.

SUBTASK 32-71-00-040-001

(2) Retract the tailskid.

(a) Remove the tail skid lockout pin, SPL-6254, from the lock links for the tail skid if it is installed (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(c) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

WARNING DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the RETRACT position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID ASSEMBLY - ADJUSTMENT/TEST

1. General

A. This procedure has this task:

(1) An operational test of the tail skid system

TASK 32-71-00-710-801

2. Tail Skid Assembly Operational Test

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) The operational test does a check to make sure the tail skid components were installed and operate correctly.

(2) You do not have to lift the airplane on jacks to do the operational test.

B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-62-00-740-801	Supplemental Proximity Sensor Electronic Unit (SPSEU) BITE Test - Ground Test (P/B 501)

C. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Prepare for the Test

SUBTASK 32-71-00-480-010

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear and tail skid, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-860-004

(2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-71-00-860-005

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 32-71-00-010-007

(4) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

F. Tail Skid System Operational Test

SUBTASK 32-71-00-860-006

(1) Do these steps to extend and retract the tail skid:

(a) Remove the retractable tail skid lockout pin, from the lock links for the tail skid if it is installed (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(b) Set the Tail skid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

1) Make sure the tail skid moves to the extended position within 30 seconds.

(c) Set the Tail skid Extend Switch to the RETRACT position..

1) Make sure the tail skid moves to the retracted position within 30 seconds.

SUBTASK 32-71-00-740-001

(2) Do this task: Supplemental Proximity Sensor Electronic Unit (SPSEU) BITE Test - Ground Test, TASK 32-62-00-740-801.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-71-00-860-007

(1) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-71-00-410-005

(2) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tailskid Extend Switch
Figure 501/32-71-00-990-806

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID - INSPECTION/CHECK

1. General

A. It is necessary to do an inspection of the tailskid assembly after there has been a tail strike.

B. This procedure has these tasks:

(1) An inspection of the tail skid cartridge assembly.

(2) An inspection of the tail skid shoe.

LOM 465-999

(3) An inspection of the tail skid hydraulic actuator and linkage assembly.

LOM ALL

C. This task does not remove or install the tail skid assembly.

TASK 32-71-00-200-801

2. Tailskid Cartridge Assembly - Inspection/Check

(Figure 601)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
05-51-32-210-801	Tail Strike Inspection (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-71-00-000-802	Cartridge Assembly Removal (P/B 401)
32-71-00-000-810	Cartridge Assembly Removal (P/B 401)
32-71-00-400-802	Cartridge Assembly Installation (P/B 401)
32-71-00-400-807	Cartridge Assembly Installation (P/B 401)

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

C. Prepare for the Inspection/Check

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464

SUBTASK 32-71-00-480-001

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999

SUBTASK 32-71-00-480-005

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear and tail skid, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

LOM ALL

D. Tailskid Cartridge Assembly Inspection

SUBTASK 32-71-00-210-001

(1) Do a general visual inspection of the tail skid crushable cartridge for evidence of tail strike.

NOTE: You must examine the warning placard for the cartridge assembly at the next possible check after the tail strike. The skirt fairing for the tail skid does not extend again because of gravity as a result of time.

NOTE: The tail skid assembly is in normal position if the upper edge of the warning decal is in line with the fairing.

(a) Look at the warning decal [4] on the aft side of the skirt [5].

(b) If there is evidence of tail strike or damage to the airplane, do this task: (TASK 05-51-32-210-801).

1) If you see any of the green part of the warning decal [4], the crushable cartridge is still acceptable.

2) If you can not see any of the green part of the warning decal [4], then replace the crushable cartridge, these are the tasks:

- Cartridge Assembly Removal, TASK 32-71-00-000-802 or Cartridge Assembly Removal, TASK 32-71-00-000-810
- Cartridge Assembly Installation, TASK 32-71-00-400-802 or Cartridge Assembly Installation, TASK 32-71-00-400-807.

END OF TASK

TASK 32-71-00-900-801

3. Tailskid Shoe Inspection

A. References

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-71-00-960-802	Replacement of the Tail Skid Shoe. (P/B 201)
51-21-99-300-802	Decorative Exterior Paint System Repair (P/B 701)

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Prepare for the Inspection

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464

SUBTASK 32-71-00-480-002

> **WARNING** MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

LOM 465-999

SUBTASK 32-71-00-480-017

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(2) If the downlock pins are not installed in the nose and main landing gear and tail skid, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

LOM ALL

D. Tailskid Shoe Inspection

(Figure 601)

SUBTASK 32-71-00-210-003

(1) Do these steps to inspect the tailskid shoe [6] after a tail strike:

NOTE: The tailskid assembly is in normal position if the upper edge of the warning decal is in line with the fairing.

(a) Check the shoe [6] for cracks or chips:

1) If there are cracks in the shoe [6] or pieces of the shoe are gone, outboard of the bolt holes, the shoe is serviceable.

2) If there are cracks that start at the bolt holes, you must replace the shoe [6]. These are the tasks:

- Replacement of the Tail Skid Shoe., TASK 32-71-00-960-802,

(b) When the shoe [6] is worn to the WEAR DIMPLES, replace the shoe. These are the tasks:

- Replacement of the Tail Skid Shoe., TASK 32-71-00-960-802,

(c) If the tail skid drag shoe is within tolerance and the paint finish on the lower surface of the tail skid drag shoe has been gouged or scratched by contact with the runway, paint the skid drag shoe in accordance with the Decorative Exterior Finishes procedure, do this task: Decorative Exterior Paint System Repair, TASK 51-21-99-300-802.

NOTE: If the tail skid drag shoe scratch or gouge damage is not painted over, a person may interpret the damage as new and request an unnecessary inspection. The addition of paint can help to determine when new tail strikes have occurred.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Put the Airplane Back to its Usual Condition

SUBTASK 32-71-00-000-006

(1) Remove the landing gear downlock pins. Do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(TAILSKID ASSEMBLY IS SHOWN EXPLODED)

A

K24960 S0006575925_V2

Tailskid Inspection
Figure 601/32-71-00-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Tailskid Inspection
Figure 601/32-71-00-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-00-200-802

4. Tail Skid Hydraulic Actuator and Linkage Inspection
(Figure 602)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205

C. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door
311BL	Stabilizer Trim Access Door

E. Prepare for the Inspection/Check

SUBTASK 32-71-00-480-011

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-00-490-006

(2) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-00-867-007

(3) If the tail skid has not already been extended, extend it now

NOTE: The tail skid needs to be in the extended position when you do this task.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(b) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

WARNING DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(f) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(g) Install the tail skid lockout pin, SPL-6254, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

SUBTASK 32-71-00-010-008

(4) Disconnect and lower the fairing [1]:

(a) Hold the fairing [1] in its location.

(b) Remove the bolts [7] that hold the fairing [1] to the body of the airplane.

(c) Lower the fairing [1] so it is resting on the drag lever.

SUBTASK 32-71-00-010-009

(5) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

F. Tail Skid Hydraulic Actuator and Linkage Inspection

SUBTASK 32-71-00-210-004

(1) Do a general visual inspection of the tail skid hydraulic actuator for evidence of leaks or damage.

(2) Do a general visual inspection of the tail skid linkage for evidence of corrosion or damage.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 32-71-00-410-006

(1) Install the fairing [1]:

(a) Put the fairing [1] in its position on the airplane.

(b) Install the bolts [7] that hold the fairing [1] to the body of the airplane.

SUBTASK 32-71-00-867-008

(2) Retract the tail skid.

(a) Remove the tail skid lockout pin, SPL-6254, from the lock links for the tail skid if it is installed (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(c) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 465-999 (Continued)

WARNING	DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tail Skid Extend Switch, located on the front face of the J23 Box, to the RETRACT position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-71-00-410-007

(3) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Tail Skid Hydraulic Actuator and Linkage Inspection/Check
Figure 602/32-71-00-990-807

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID HYDRAULIC ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the tail skid hydraulic actuator.

(2) Installation of the tail skid hydraulic actuator.

TASK 32-71-04-000-801

2. Tail Skid Hydraulic Actuator Removal

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Tools/Equipment

Reference	Description
STD-7394	Cap - Dust, Electrical Connector
STD-14686	Fittings - Hydraulic, Caps/Plugs (ref. AMM 20-10-XX)

C. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door
311BL	Stabilizer Trim Access Door

E. Tail Skid Hydraulic Actuator Removal

SUBTASK 32-71-04-480-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-04-490-001

(2) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-04-867-001

(3) If the tail skid has not already been extended, extend it now.

NOTE: The tail skid needs to be in the extended position when you do this task.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(b) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

WARNING DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(f) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(g) Install the retractable tail skid lockout pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-04-010-004

(4) Disconnect and lower the fairing [3]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Hold the fairing [3] in its location.

(b) Remove the bolts [2] that hold the fairing [3] to the body of the airplane.

(c) Lower the fairing [3] so it is resting on the drag lever.

SUBTASK 32-71-04-010-001

(5) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-04-030-005

(6) Disconnect the electrical connector [15] from the tail skid hydraulic actuator [1].

(a) Install a dust cap, STD-7394, on the electrical connector [15].

SUBTASK 32-71-04-030-001

(7) Disconnect hydraulic line [13] and hydraulic line [14] from the tail skid hydraulic actuator [1].

(a) Install the cap/plug, STD-14686, on the tail skid hydraulic actuator [1] ports.

(b) Install the cap/plug, STD-14686, on the hydraulic line [13] and hydraulic line [14].

SUBTASK 32-71-04-020-002

(8) Remove the nut [11] and washer [10] to disconnect the blue band jumper [12].

SUBTASK 32-71-04-020-003

(9) Remove the screw [16], spring washer [17], washers [18], and red band jumper [19] from the tail skid hydraulic actuator [1].

SUBTASK 32-71-04-020-001

(10) Do these steps to disconnect the tail skid hydraulic actuator [1] from the lock link mechanism:

(a) Remove the cotter pins [5], nuts [6], washers [7], and anti-rotation washers [8] from the aft pin crank [4] and forward pin crank [9].

1) Discard the cotter pins [5].

(b) Remove the tail skid hydraulic actuator [1] from the aft pin crank [4] and forward pin crank [9].

(c) Remove the washers [7] and anti-rotation washers [8] from the aft pin crank [4] and forward pin crank [9].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Tail Skid Hydraulic Actuator Installation
Figure 401/32-71-04-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Tail Skid Hydraulic Actuator Installation
Figure 401/32-71-04-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-04-400-801

3. Tail Skid Hydraulic Actuator Installation

(Figure 401)

A. References

Reference	Title
32-71-00-710-801	Tail Skid Assembly Operational Test (P/B 501)
SWPM 20-20-00	ELECTRICAL BONDING PROCESSES

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-614	Bonding Meters - Non-Intrinsically Safe (For use in outside Class I, Divisions I & II non-hazardous locations. For hazardous locations, use COM-1550). Part #: 247000 Supplier: 00426 Part #: 620LK Supplier: 1CRL2 Part #: BLR-0003-XX Supplier: KC432 Part #: BT51 Supplier: 00426 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659 Opt Part #: 247001 Supplier: 00426

C. Consumable Materials

Reference	Description	Specification
A50231	Sealant - Pressure And Environmental - Chromate Type	BMS5-95 Class B
A50337	Sealant - Fuel Tank	BMS5-45 Class B
A50359	Sealant - Low Density, Non-Chromate Type	BMS5-142 Type II Class B
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	AMS3819 Class 1 Grade A or B Form 1 (Supersede BMS15-5 CL A)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Tail skid hydraulic actuator	32-71-00-06-055	LOM 465-999
5	Cotter pin	32-71-00-06-035	LOM 465-999

E. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

F. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Number	Name/Location
311BL	Stabilizer Trim Access Door

G. Tail Skid Hydraulic Actuator Installation

SUBTASK 32-71-04-490-002

(1) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-04-010-002

(2) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-04-420-001

(3) If the link pins were previously removed, make sure that the pin cranks are in the correct position for the tail skid.

(a) If the tail skid is in the extended position, the forward pin crank [9] should point down and forward and aft pin crank [4] should point up and forward.

(b) If the tail skid is in the retracted position, the forward pin crank [9] should point down and forward and aft pin crank [4] should point up and aft.

SUBTASK 32-71-04-420-004

(4) Install the tail skid hydraulic actuator [1] on the forward pin crank [9]:

(a) Install the washer [7], anti-rotation washer [8], tail skid hydraulic actuator [1], anti-rotation washer [8], washer [7], and nut [6] on the forward pin crank [9].

(b) Tighten the nut [6] to 160 in-lb (18.1 N·m) - 190 in-lb (21.5 N·m) above the run on torque value.

1) If it is necessary, loosen the nut [6] to the nearest castellation.

(c) Install the new cotter pin [5] on the nut [6].

SUBTASK 32-71-04-420-005

(5) Install the tail skid hydraulic actuator [1] on the aft pin crank [4]:

(a) Install the washer [7], anti-rotation washer [8], tail skid hydraulic actuator [1], anti-rotation washer [8], washer [7], and nut [6] on the aft pin crank [4].

(b) Tighten the nut [6] to 160 in-lb (18.1 N·m) - 190 in-lb (21.5 N·m) above the run on torque value.

1) If it is necessary, loosen the nut [6] to the nearest castellation.

(c) Install the new cotter pin [5] on the nut [6].

SUBTASK 32-71-04-420-006

(6) Install the red band jumper [19] as follows:

(a) Use cotton wiper, G00034, moist in solvent, B00184, to clean the mating surfaces of the tail skid hydraulic actuator [1], red band jumper [19], screw [16], spring washer [17], and washers [18].

(b) Install the screw [16], spring washer [17], and washers [18] that attach the red band jumper [19] to the tail skid hydraulic actuator [1].

(c) Tighten the screw [16] to 33 in-lb (3.7 N·m) - 40 in-lb (4.5 N·m).

(d) Measure the electrical bonding resistance between the red band jumper [19] and airplane structure (SWPM 20-20-00).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Use a non-intrinsically safe bonding meter, COM-614.
2) Make sure that the electrical bonding resistance is 0.01 ohm (10.0 milliohm) or less.

(e) Apply a fillet seal with sealant, A50337, or sealant, A50231, or sealant, A50359, to cover the red band jumper [19], screw [16], spring washer [17], and washers [18].

SUBTASK 32-71-04-420-007

(7) Install the blue band jumper [12] as follows:

(a) Use cotton wiper, G00034, moist in solvent, B00184, to clean the mating surfaces of the airplane structure, blue band jumper [12], washer [10], and nut [11].

(b) Install the washer [10] and nut [11] that attach the blue band jumper [12] to the airplane structure.

(c) Tighten the nut [11] to 28 in-lb (3.2 N·m) - 35 in-lb (4.0 N·m).

(d) Measure the electrical bonding resistance between the blue band jumper [12] and tail skid hydraulic actuator [1] (SWPM 20-20-00).

1) Use a non-intrinsically safe bonding meter, COM-614.
2) Make sure that the electrical bonding resistance is 0.01 ohm (10.0 milliohm) or less.

(e) Apply a fillet seal with sealant, A50337, or sealant, A50231, or sealant, A50359, to cover the blue band jumper [12], washer [10], and nut [11].

SUBTASK 32-71-04-010-005

(8) Remove the caps from the ports of the tail skid hydraulic actuator [1].

SUBTASK 32-71-04-420-008

(9) Connect the hydraulic line [14] to the tail skid hydraulic actuator [1].

(a) Remove the cap from the hydraulic line [14].

(b) Tighten the B-nut on the hydraulic line [14] to 161 in-lb (18.2 N·m) - 179 in-lb (20.2 N·m).

SUBTASK 32-71-04-420-009

(10) Connect the hydraulic line [13] to the tail skid hydraulic actuator [1].

(a) Remove the cap from the hydraulic line [13].

(b) Tighten the B-nut on thehydraulic line [13] to 104 in-lb (11.8 N·m) - 116 in-lb (13.1 N·m).

SUBTASK 32-71-04-430-003

(11) Connect the electrical connector [15] to the tail skid hydraulic actuator [1].

(a) Remove the cap from the electrical connector [15].

SUBTASK 32-71-04-410-002

(12) Install the fairing [3]:

(a) Put the fairing [3] in its location on the airplane.

(b) Install the bolts [2] that hold the fairing [3] to the body of the airplane.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 32-71-04-860-001

(1) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

SUBTASK 32-71-04-710-001

(2) Do this task: Tail Skid Assembly Operational Test, TASK 32-71-00-710-801.

SUBTASK 32-71-04-410-003

(3) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID PIVOT LINKAGE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the tail skid pivot linkage

(2) An installation of the tail skid pivot linkage.

TASK 32-71-21-000-801

2. Tail Skid Pivot Linkage Removal

(Figure 401)

A. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

B. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

C. Tail Skid Pivot Linkage Removal

SUBTASK 32-71-21-010-001

(1) Open the access door for the stabilizer trim, do this step:

Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-21-020-001

> **CAUTION** MAKE SURE THAT YOU DISCONNECT THE CARTRIDGE ASSEMBLY [2] CAREFULLY. FAILURE TO DO CAN CAUSE DAMAGE TO THE ALUMINUM CARTRIDGE.

(2) Disconnect the cartridge assembly [2] from the pivot linkage [1]:

(a) Remove the nut [13], and the washer [12] from the bolt [10].

(b) Remove the bolt [10] that holds the female telescope rod side of the cartridge assembly [2] to the pivot linkage [1].

(c) Remove the washer [11] from the bolt [10].

SUBTASK 32-71-21-020-002

(3) Remove the pivot linkage [1]:

(a) Remove the nut [4], and the washer [3] from the shoulder bolt [19].

(b) Remove the shoulder bolt [19] to disconnect the pivot linkage [1] from the support fitting.

(c) Remove the nut [9], and the washer [8] from the shoulder bolt [15].

(d) Remove the shoulder bolt assembly [15] from the fuse pin [16].

(e) If needed, remove the bushings [17] and washer [14] from the bolt assembly [15].

NOTE: The bushings [17] are plastic spacers intended to center the bolt in the fuse pin. Removal is not normally required.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(f) Remove the fuse pin [16] to disconnect the pivot linkage [1] from the fuse link [7].

(g) Remove the pivot linkage [1] from the airplane.

SUBTASK 32-71-21-020-003

(4) If you need to remove the fuse link [7], do the steps that follow;

(a) Remove the nut [6], and the washer [5] from the shoulder bolt [18].

(b) Remove the shoulder bolt [18] from the shear pin [17].

(c) Remove the shear pin [17] to disconnect the fuse link [7] from the support fitting.

(d) Remove the fuse link [7] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G46999 S0006575931_V3

Tail Skid Pivot Linkage Installation
Figure 401/32-71-21-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G47093 S0006575932_V2

Tail Skid Pivot Linkage Installation
Figure 401/32-71-21-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-21-400-801

3. Tail Skid Pivot Linkage Installation

(Figure 401)

A. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
D00633	Grease - Aircraft General Purpose	BMS3-33

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

C. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

D. Tail Skid Pivot Linkage Installation

SUBTASK 32-71-21-420-001

(1) If you need to install the fuse link [7], do the steps that follow;

(a) Put the fuse link [7] in its position on the support fitting.

(b) Align the holes in the fuse link [7] to the holes in the support fitting.

(c) Put the shear pin [17] through the support fitting, and the fuse link [7].

(d) Put the shoulder bolt [18] through shear pin [17].

(e) Install the washer [5], and the nut [6] on the shoulder bolt [18].

(f) Tighten the nut [6] to 20-25 in-lbs (2.26-2.82 newton-meters).

SUBTASK 32-71-21-420-002

(2) Install the pivot linkage [1]:

CAUTION

MAKE SURE NOT TO DAMAGE THE DRY FILM LUBRICATION ON THE SURFACES OF THE FUSE PIN [16], SHEAR PIN [17], AND THE SHOULDER BOLT [19]. THE SHEAR PIN [17] CAN BE INSTALLED LAST. IF THERE IS NOT SUFFICIENT CLEARANCE BETWEEN THE FUSE LINK [7], AND THE SUPPORT FITTING, YOU CAN SMOOTH THE SURFACE OF THE FUSE LINK [7]. MAKE SURE THERE IS A FINISH OF 32AA MICROINCHES ON THE SURFACE.

(a) Put the pivot linkage [1] in its position on the support fitting.

(b) Align the upper hole in the pivot linkage [1] to the hole in the support fitting.

(c) Put the shoulder bolt [19] through support fitting, and the pivot linkage [1].

(d) Install the washer [3], and the nut [4] on the shoulder bolt [19].

(e) Tighten the nut [4] to 240-300 in-lbs (27.12-33.90 newton-meters).

(f) Align the lower hole in the pivot linkage [1] to the hole in the fuse link [7].

(g) Put the fuse pin [16] through the pivot linkage [1], and the fuse link [7].

(h) If removed from the shoulder bolt assembly [15], install the washer [14] and bushings [17] on the shoulder bolt [15] using wet sealant, A00247.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(i) Apply grease, D00633 to all surfaces of the washer [14] and bushings [17] on the shoulder bolt [15], and pack the cavity between bushings.

(j) Put the shoulder bolt assembly [15] through the fuse pin [16].

(k) Install the washer [8], and the nut [9] on the shoulder bolt [15].

(l) Tighten the nut [9].

SUBTASK 32-71-21-420-003

CAUTION

MAKE SURE THAT YOU CONNECT THE CARTRIDGE ASSEMBLY [2] CAREFULLY. FAILURE TO DO CAN CAUSE DAMAGE TO THE ALUMINUM CARTRIDGE.

(3) Connect the cartridge assembly [2] to the pivot linkage [1]:

(a) Align the female telescope rod side of the cartridge assembly [2] to the forward hole in the pivot linkage [1].

(b) Install the washer [11] on the bolt [10].

(c) Put the bolt [10] through the pivot linkage [1], and the female telescope rod side of the cartridge assembly [2].

(d) Install the washer [12], and the nut [13] on the bolt [10].

(e) Tighten the nut [13].

SUBTASK 32-71-21-410-001

(4) Close the access door for the stabilizer trim, do this step:

Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TAIL SKID LINK ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the tail skid upper link.

(2) An installation of the tail skid upper link.

(3) A removal of the tail skid lock links.

(4) An installation of the tail skid lock links.

TASK 32-71-22-000-801

2. Tail Skid Upper Link - Removal

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-71-04-000-801	Tail Skid Hydraulic Actuator Removal (P/B 401)

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door
311BL	Stabilizer Trim Access Door

D. Tail Skid Upper Link Removal

SUBTASK 32-71-22-480-001

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-22-490-001

(2) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-22-010-002

(3) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-22-867-001

(4) If the tail skid has not already been extended, extend it now.

NOTE: The tail skid needs to be in the extended position when you do this task.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(b) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

WARNING DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(f) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(g) Install the retractable tailskid lockout pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-22-010-001

(5) Disconnect and lower the fairing [2]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Hold the fairing [2] in its location.

(b) Remove the bolts [4] that hold the fairing [2] to the body of the airplane.

(c) Lower the fairing [2] so it is resting on the drag lever.

SUBTASK 32-71-22-020-001

(6) Do this task: Tail Skid Hydraulic Actuator Removal, TASK 32-71-04-000-801.

SUBTASK 32-71-22-030-001

CAUTION	MAKE SURE THAT THE CARTRIDGE ASSEMBLY AND DRAG LEVER DO NOT MOVE DOWN QUICKLY WHEN YOU DISCONNECT THE PIN ASSEMBLY. THE PIN ASSEMBLY THAT YOU REMOVE HOLDS THE CARTRIDGE ASSEMBLY IN ITS POSITION. THE ASSEMBLY CAN CAUSE DAMAGE IF IT HITS THE AIRPLANE.

(7) Do these steps to disconnect the tail skid cartridge assembly [1] from the aft lock link [7] and the upper link [5]:

(a) Remove the cotter pin [12], the nut [13], and the washer [11] from the bolt [10].

(b) Remove the bolt [10], the washer [9], and the two end caps [14] from the pin [8].

(c) Remove the pin [8] to disconnect the tail skid cartridge assembly [1] from the aft lock link [7] and upper link [5].

(d) Slowly move the tail skid cartridge assembly [1] and drag lever to the extended position.

SUBTASK 32-71-22-020-002

(8) Do these steps to disconnect the upper link [5] from the airplane:

In the area behind this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

(a) Disconnect the bolt [22] from the upper link [5]:

1) Remove the cotter pin [26], the nut [25], and the washer [24] from the bolt [22].

2) Remove the bolt [22] from the upper link [5] and the pin [21].

(b) Hold the upper link [5] in its position such that it will not move when you remove the pin [21].

(c) Remove the pin [21] from the upper link [5] and the airplane.

(d) Remove the upper link [5] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

J66096 S0000174499_V4

Tail Skid Link Assembly Installation
Figure 401/32-71-22-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

J66300 S0000174500_V3

Tail Skid Link Assembly Installation
Figure 401/32-71-22-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

J66584 S0000174501_V3

Tail Skid Link Assembly Installation
Figure 401/32-71-22-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 32-71-22-400-801

3. Tail Skid Upper Link Installation

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-71-04-400-801	Tail Skid Hydraulic Actuator Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205

C. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

D. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

E. Tail Skid Upper Link Installation

SUBTASK 32-71-22-490-002

(1) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-22-010-003

(2) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-22-420-001

(3) Do these steps to connect the upper link [5] to the airplane:

(a) Hold the upper link [5] in its position on the airplane.

(b) Install the pin [21] in the airplane and the upper link [5].

NOTE: The pin is installed from the left hand side of the airplane to the right hand side.

(c) Align the crank on the pin [21] with the upper link [5]:

1) Hold the upper link [5] such that the link is horizontal.

2) Move the crank on the pin [21] such that it is pointing up and approximately 90 degrees to the upper link [5] when the bolt holes in each are aligned.

(d) Connect the upper link [5] to the pin [21]:

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1) Install the bolt [22] through the bushing [23] to connect the upper link [5] to the pin [21].

NOTE: Install the bolt [22] from the bottom (aft) of the upper link [5], this will make it easier for you to install the nut [25] and cotter pin [26].

2) Install the washer [24] and nut [25] on the bolt [22].

3) Torque the nut [25] to 22 ±2 in-lb (2 ±1 N·m) above the run on torque.

4) Back the nut [25] off to the nearest castellation and install the cotter pin [26].

SUBTASK 32-71-22-430-001

(4) Do these steps to connect the tail skid cartridge assembly [1] to the aft lock link [7] and the upper link [5]:

(a) Put the upper end of the tail skid cartridge assembly [1] in its position in the lugs of the upper link [5].

(b) Put the upper end of the tail skid cartridge assembly [1] and the upper link [5] in their position in the lugs of the aft lock link [7].

(c) Install the pin [8] to connect the tail skid cartridge assembly [1] to the aft lock link [7] and upper link [5].

(d) Install the two end caps [14], the washer [9], and the bolt [10] on the pin [8].

(e) Install the washer [11] and nut [13] on the bolt [10].

(f) Torque the nut [13] to 22 ±2 in-lb (2 ±1 N·m) above the run on torque.

(g) Back the nut [13] off to the nearest castellation and install the cotter pin [12].

SUBTASK 32-71-22-420-002

(5) Do this task: Tail Skid Hydraulic Actuator Installation, TASK 32-71-04-400-801.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-71-22-410-001

(1) Install the fairing [2]:

(a) Put the fairing [2] in its position on the airplane.

(b) Install the bolts [4] that hold the fairing [2] to the body of the airplane.

SUBTASK 32-71-22-867-002

(2) Retract the tailskid.

(a) Remove the tail skid lockout pin, SPL-6254, from the lock links for the tail skid if it is installed (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

ECCN 9E991 BOEING PROPRIETARY - See title page for details

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(c) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the RETRACT position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-71-22-410-002

(3) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

——— END OF TASK ———

TASK 32-71-22-000-802

4. Tail Skid Lock Link - Removal

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-71-04-000-801	Tail Skid Hydraulic Actuator Removal (P/B 401)

B. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door
311BL	Stabilizer Trim Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Tail Skid Lock Link Removal

SUBTASK 32-71-22-480-002

> **WARNING** MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-22-490-003

(2) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-22-010-005

(3) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-22-867-003

(4) If the tail skid has not already been extended, extend it now.

NOTE: The tail skid needs to be in the extended position when you do this task.

(a) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(b) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(c) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the EXTEND position.

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(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(f) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

WARNING MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR AND THE TAIL SKID. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT, AND THE TAIL SKID CAN EXTEND. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(g) Install the retractable tail skid lockout pin, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 32-71-22-010-004

(5) Disconnect and lower the fairing [2]:

(a) Hold the fairing [2] in its location.

(b) Remove the bolts [4] that hold the fairing [2] to the body of the airplane.

(c) Lower the fairing [2] so it is resting on the drag lever.

SUBTASK 32-71-22-020-004

(6) Do this task: Tail Skid Hydraulic Actuator Removal, TASK 32-71-04-000-801.

SUBTASK 32-71-22-030-002

CAUTION MAKE SURE THAT THE CARTRIDGE ASSEMBLY AND DRAG LEVER DO NOT MOVE DOWN QUICKLY WHEN YOU DISCONNECT THE PIN ASSEMBLY. THE PIN ASSEMBLY THAT YOU REMOVE HOLDS THE CARTRIDGE ASSEMBLY IN ITS POSITION. THE ASSEMBLY CAN CAUSE DAMAGE IF IT HITS THE AIRPLANE.

(7) Do these steps to disconnect the cartridge assembly from the lock links and the upper link:

(a) Remove the cotter pin [12], the nut [13], and the washer [9] from the bolt [10].

(b) Remove the bolt [10], the washer [11], and the two end caps [14] from the pin [8].

(c) Remove the pin [8] to disconnect the tail skid cartridge assembly [1] from the aft lock link [7] and upper link [5].

(d) Slowly move the tail skid cartridge assembly [1] and drag lever to the extended position.

SUBTASK 32-71-22-020-005

(8) Do these steps to disconnect the lock links from the airplane:

In the area behind this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

(a) Remove the cotter pin [20], nut [19], and washer [18] from the bolt [17].

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(b) Remove the bolt [17] from the forward lock link [6] and pin [15].

(c) Hold the forward lock link [6] in its position such that it will not move when you remove the pin [15].

(d) Remove the pin [15] from the forward lock link [6] and the airplane.

(e) Remove the forward lock link [6] from the airplane.

——— END OF TASK ———

TASK 32-71-22-400-802

5. Tail Skid Lock Link Installation

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-71-04-400-801	Tail Skid Hydraulic Actuator Installation (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-6254	Lockout Pin Assy - FWD & AFT Lock Link, Tail Skid Part #: C32050-1 Supplier: 81205

C. Location Zones

Zone	Area
311	Area Aft of Pressure Bulkhead - Left
312	Area Aft of Pressure Bulkhead - Right

D. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

E. Tail Skid Lock Link Installation

SUBTASK 32-71-22-490-004

(1) Use a ladder or equivalent to get access to the tail skid assembly.

SUBTASK 32-71-22-010-006

(2) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 32-71-22-420-003

(3) Do these steps to connect the forward lock link [6] and aft lock link [7] to the airplane:

NOTE: Installation of the tail skid lock pin will make connecting the lock links to the airplane easier.

(a) Hold the forward lock link [6] and aft lock link [7] in their position on the airplane.

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(b) Install the pin [15] in the airplane and the forward lock link [6].

NOTE: The pin [15] is installed from the left hand side of the airplane to the right hand side.

(c) Align the crank on the pin [15] with the forward lock link [6]:

1) Hold the forward lock link [6] such that the link is horizontal.

2) Move the crank on the pin [15] such that it is pointing forward and in the opposite direction as the forward lock link [6] when the bolt holes in each are aligned.

(d) Install the bolt [17] through the bushing [16] to connect the forward lock link [6] to the pin [15].

NOTE: Install the bolt [17] from the bottom (back) of the forward lock link [6], this will make it easier for you to install the nut [19] and cotter pin [20].

(e) Install the washer [18] and nut [19] on the bolt [17].

(f) Torque the nut [19] to 22 ±2 in-lb (2 ±1 N·m) above the run on torque.

(g) Back the nut [19] off to the nearest castellation and install the cotter pin [20].

SUBTASK 32-71-22-430-002

(4) Do these steps to connect the tail skid cartridge assembly [1] to the aft lock link [7] and the upper link [5]:

(a) Put the upper end of the tail skid cartridge assembly [1] in its position in the lugs of the upper link [5].

(b) Put the upper end of the tail skid cartridge assembly [1] and the upper link [5] in their position in the lugs of the aft lock link [7].

(c) Install the pin [8] to connect the tail skid cartridge assembly [1] to the aft lock link [7] and upper link [5].

(d) Install the two end caps [14], the washer [9], and the bolt [10] on the pin [8].

(e) Install the washer [11] and nut [13] on the bolt [10].

(f) Torque the nut [13] to 22 ±2 in-lb (2 ±1 N·m) above the run on torque.

(g) Back the nut [13] off to the nearest castellation and install the cotter pin [12].

SUBTASK 32-71-22-420-004

(5) Do this task: Tail Skid Hydraulic Actuator Installation, TASK 32-71-04-400-801.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 32-71-22-410-003

(1) Install the fairing [2]:

(a) Put the fairing [2] in its position on the airplane.

(b) Install the bolts [4] that hold the fairing [2] to the body of the airplane.

SUBTASK 32-71-22-867-004

(2) Retract the tailskid.

(a) Remove the tail skid lockout pin, SPL-6254, from the lock links for the tail skid if it is installed (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	18	C01661	SPSEU-1

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F/O Electrical System Panel, P6-12

Row	Col	Number	Name
C	7	C01660	TAILSKID

> **WARNING** KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(c) For the hydraulic system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

> **WARNING** DO NOT OPERATE THE TAIL SKID UNTIL ALL PERSONNEL, AND EQUIPMENT ARE CLEAR OF THE AREA AROUND THE TAIL. THE TAIL SKID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Set the Tailskid Extend Switch, located on the front face of the J23 Box, to the RETRACT position.

(e) For the hydraulic system A, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 32-71-22-410-004

(3) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

END OF TASK

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