



EMB145 – EMB135

AIRCRAFT  
MAINTENANCE MANUAL

**NOSE-LANDING-GEAR TORQUE LINK ASSEMBLIES - REMOVAL/INSTALLATION**

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to remove and install the torque-link assembly of the nose-landing-gear.
- B. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	DESCRIPTION	EFFECTIVITY
32-20-10-000-801-A	NOSE-LANDING-GEAR TORQUE LINK ASSEMBLY - REMOVAL	ALL
32-20-10-400-801-A	NOSE-LANDING-GEAR TORQUE LINK ASSEMBLY - INSTALLATION	ALL



# AIRCRAFT MAINTENANCE MANUAL

TASK 32-20-10-000-801-A

EFFECTIVITY: ALL

## 2. NOSE-LANDING-GEAR TORQUE LINK ASSEMBLY - REMOVAL

### A. General

- (1) This procedure gives the instructions to remove the torque-link assembly from the nose landing gear.

### B. References

REFERENCE	DESIGNATION
AMM TASK 07-10-00-500-801-A/200	-
AMM TASK 07-10-00-500-803-A/200	-
AMM TASK 20-00-00-910-801-A/200	AIRCRAFT SAFE PROCEDURES FOR MAINTENANCE SERVICES - MAINTENANCE PRACTICES
AMM TASK 32-49-05-000-801-A/400	WHEEL ASSEMBLY OF THE NOSE LANDING GEAR - REMOVAL
SRM 51-20-01	-

### C. Zones and Accesses

Not Applicable

### D. Tools and Equipment

Not Applicable

### E. Auxiliary Items

Not Applicable

### F. Consumable Materials

Not Applicable

### G. Expandable Parts

Not Applicable

### H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	NLG

### I. Preparation

SUBTASK 841-002-A

**WARNING: MAKE SURE THAT THE AIRCRAFT IS IN A SAFE CONDITION BEFORE YOU DO THE MAINTENANCE PROCEDURES. THIS IS TO PREVENT INJURY TO PERSONS AND/OR DAMAGE TO THE EQUIPMENT.**

- (1) Do the procedure to make the aircraft safe for maintenance ( AMM TASK 20-00-00-910-801-A/200).
- (2) On the Circuit Breaker Panel, open the ELEC PUMP 1, CMD, IND 1, and IND 2 circuit breakers and attach a DO-NOT-CLOSE tag to them.



- (3) Lift the aircraft on jacks (AMM TASK 07-10-00-500-801-A/200 or AMM TASK 07-10-00-500-803-A/200).
- (4) Remove the LH or RH NLG wheel assembly, as necessary ( [AMM TASK 32-49-05-000-801-A/400](#)).

J. Removal ([Figure 401](#))

SUBTASK 020-002-A

- (1) To disconnect the torque links, do as follows:
  - (a) Remove the sealant, as follows (SRM 51-20-01):
    - 1 From the bolts (8) (10) (12) (22)
    - 2 From the nuts (1) (6) (14) (19) (21)
    - 3 From the washers (2) (7) (13) (20)
    - 4 From the cotter pins (3) (5) (15) (18)
  - (b) Remove and discard the cotter pin (18), nut (19), washer (20) and bolt (22) from the nut (21).

**CAUTION:** DO NOT LET THE UPPER-TORQUE-LINK AND LOWER-TORQUE-LINK ASSEMBLIES HIT THE SLIDING TUBE. IF YOU DO NOT OBEY THIS PRECAUTION, DAMAGE TO THESE PARTS CAN OCCUR.

- (c) Remove the nut (21), washer (23), washer (25) and bolt (24) and disconnect the upper torque link (17) from the lower torque link (26).

- (2) To remove the torque links from the sliding tube (11), do as follows:

- (a) Remove and discard the cotter pins (3) (15), nuts (1) (14), washers (2) (13) and bolts (10) (12) from the lugs of the sliding tube (11).

**CAUTION:** DO NOT LET THE UPPER-TORQUE-LINK AND LOWER-TORQUE-LINK ASSEMBLIES HIT THE SLIDING TUBE. IF YOU DO NOT OBEY THIS PRECAUTION, DAMAGE TO THESE PARTS CAN OCCUR.

- (b) Hold the upper torque link (17). Then remove the pin (16) and washer (9).
  - (c) Remove the upper torque link (17) with the target lever assembly (4) from the slug of the sliding tube (11).

**NOTE:** During the removal of the torque link (17), identify the washer (9) as to correct position and side, to prevent its inverted installation. This could cause a steering misalignment.

- (d) Remove and discard the cotter pin (5), nut (6), washer (7) and bolt (8) from the target lever assembly (4).
  - (e) Remove the target lever assembly (4) from the upper torque link (17).



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**CAUTION:** DO NOT LET THE UPPER-TORQUE-LINK AND LOWER-TORQUE-LINK ASSEMBLIES HIT THE SLIDING TUBE. IF YOU DO NOT OBEY THIS PRECAUTION, DAMAGE TO THESE PARTS CAN OCCUR.

(f) Hold the lower torque link (26). Then remove the pin (27) and washer (28).

(g) Remove the lower torque link (26) from the slug of the sliding tube (11).

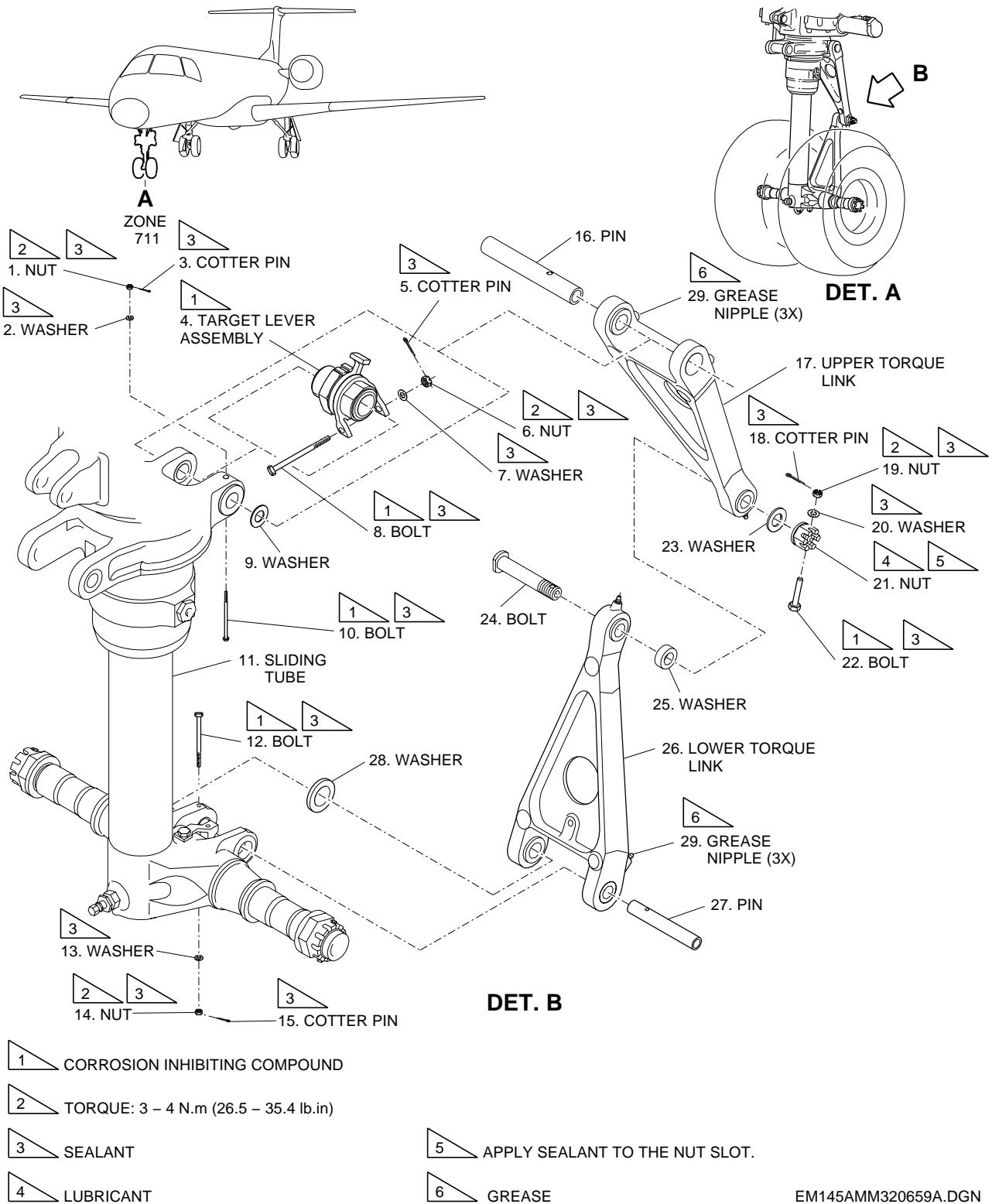
**NOTE:** During the removal of the torque link (26), identify the washer (28) as to correct position and side to prevent its inverted installation. This could cause a steering misalignment.

(h) Remove the lower torque link (26) from the slug of the sliding tube (11).

**EFFECTIVITY: ALL**

Nose-Landing-Gear Torque Link Assembly - Removal/Installation

Figure 401



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TASK 32-20-10-400-801-A

EFFECTIVITY: ALL

3. NOSE-LANDING-GEAR TORQUE LINK ASSEMBLY - INSTALLATION

A. General

- (1) This procedure gives the instructions to install the torque-link assembly to the nose landing gear.

B. References

REFERENCE	DESIGNATION
AMM TASK 07-10-00-500-802-A/200	-
AMM TASK 07-10-00-500-804-A/200	-
AMM TASK 20-00-00-910-801-A/200	AIRCRAFT SAFE PROCEDURES FOR MAINTENANCE SERVICES - MAINTENANCE PRACTICES
AMM TASK 32-20-10-000-801-A/400	NOSE-LANDING-GEAR TORQUE LINK ASSEMBLY - REMOVAL
AMM TASK 32-49-05-400-801-A/400	WHEEL ASSEMBLY OF THE NOSE LANDING GEAR - INSTALLATION
AMM TASK 32-63-05-700-803-A/500	PROXIMITY SWITCH (SENSOR) - CLEARANCE (GAP) ADJUSTMENT
AMM TASK 32-63-05-700-804-A/500	PROXIMITY SWITCH (SENSOR) - CLEARANCE (GAP) ADJUSTMENT - ALTERNATIVE PROCEDURE
Cotter pin	-
IPC 32-20-00	NOSE LANDING GEAR
SRM 51-20-01	-

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

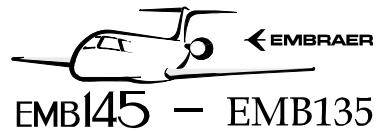
Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
	Lubricant MOLYKOTE DX	AR
MEP 09-075	Corrosion Inhibiting Compound COR-BAN 27L	AR
SAE AMS 3277, Type I, Class B2	Sealant PR1826B2ALO	AR
MIL-PRF-23827	Grease AEROSHELL 33	AR



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### G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
MS24665-153	Cotter pin	4

### H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	NLG

### I. Preparation

#### SUBTASK 841-003-A

**WARNING: MAKE SURE THAT THE AIRCRAFT IS IN A SAFE CONDITION BEFORE YOU DO THE MAINTENANCE PROCEDURES. THIS IS TO PREVENT INJURY TO PERSONS AND/OR DAMAGE TO THE EQUIPMENT.**

- (1) Make sure that the aircraft is in the same configuration as it was at the end of the removal task ([AMM TASK 32-20-10-000-801-A/400](#)).

### J. Installation (Figure 401)

#### SUBTASK 420-002-A

**WARNING: WARNING: DO NOT GET CORROSION INHIBITING COMPOUND IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM CORROSION INHIBITING COMPOUND. PUT ON A PROTECTIVE SPLASH GOGGLE AND GLOVES WHEN YOU USE CORROSION INHIBIT COMPOUND. CORROSION INHIBIT COMPOUND IS A TOXIC MATERIAL.**

**CAUTION: DO NOT LET THE UPPER-TORQUE-LINK AND LOWER-TORQUE-LINK ASSEMBLIES HIT THE SLIDING TUBE. IF YOU DO NOT OBEY THIS PRECAUTION, DAMAGE TO THESE PARTS CAN OCCUR.**

- (1) To install the NLG lower-torque-link (26) on the sliding tube (11), do as follows:
  - (a) Put the lower torque link (26) between the lugs of the sliding tube (11) and install the pin (27).
  - (b) Measure the distance between the outboard side (right side lug) of one sliding tube (11) and the lower torque link (26). Record this distance as axial play.
  - (c) Machine the washer (28) or select other one listed at IPC 32-20-00, to get an axial play of 0.05 mm (0.002 in.).
  - (d) Remove the pin (27), position the washer (28), install the lower torque link (26) between the lugs of the sliding tube (11) and install the pin again (27).

**NOTE:** During the installation of the lower torque link (26), use the same washer (28) identified on the removal or the new washer for position and side. This could avoid a steering misalignment.

- (e) Apply a thin layer of corrosion inhibiting compound COR-BAN 27L to the thread of the bolt (12).



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- (f) Align the hole of the pin (27) to install bolt (12).
- (g) Install the bolt (12), washer (13) and nut (14).
- (h) Apply a torque of 3 to 4 N.m (26.5 to 35.4 lb.in) to the nut (14).
- (i) Measure the axial play of the washer (28). Make sure that the axial play is 0.05 mm (0.002 in.).
- (j) Safety the nut (14) with a new cotter pin (15).

**CAUTION:** DO NOT LET THE UPPER-TORQUE-LINK AND LOWER-TORQUE-LINK ASSEMBLIES HIT THE SLIDING TUBE. IF YOU DO NOT OBEY THIS PRECAUTION, DAMAGE TO THESE PARTS CAN OCCUR.

- (2) To install the NLG upper-torque-link (17) and target lever assembly (4) on the sliding tube, do as follows:
  - (a) Apply corrosion inhibiting compound COR-BAN 27L to the target lever assembly (4).
  - (b) Put the upper torque link (17) and the target lever assembly (4) between the lugs of the sliding tube (11) and install the pin (16).
  - (c) Measure the distance between the inboard side of the lug of the sliding tube (11) and target lever assembly (4). Record this distance as axial play.
  - (d) Machine the washer (9) or select other one listed at IPC 32-20-00, to get an axial play of 0.05 mm (0.002 in.).
  - (e) Remove the pin (16), position the washer (9), install the upper torque link (17) and target lever assembly (4) between the lugs of the sliding tube (11) and install the pin again (16).

**NOTE:** During the installation of the upper torque link (17), use the same washer (9) identified on the removal or the new washer, for position and side. This could avoid a steering misalignment.

- (f) Apply a thin layer of corrosion inhibiting compound COR-BAN 27L to the thread of the bolt (10).
- (g) Align the hole of the pin (16) to install the bolt (10).
- (h) Install the bolt (10), washer (2) and nut (1).
- (i) Apply a torque of 3 and 4 N.m (26.5 and 35.4 lb in.) to the nut (1).
- (j) Measure the axial play of the washer (9). Make sure that the axial play is 0.05 mm (0.002 in.).
- (k) Safety the nut (1) with a new cotter pin (3).
- (l) Install the bolt (8), washer (7) and nut (6).
- (m) Apply a torque of 3 to 4 N.m (26.5 to 35.4 lb.in) to the nut (6).

- (n) Safety the nut (6) with a new cotter pin (5).

**CAUTION:** DO NOT LET THE UPPER-TORQUE-LINK AND LOWER-TORQUE-LINK ASSEMBLIES HIT THE SLIDING TUBE. IF YOU DO NOT OBEY THIS PRECAUTION, DAMAGE TO THESE PARTS CAN OCCUR.

- (3) To connect the NLG upper-torque-link (17) to the lower-torque-link (26), do as follows:
- Connect the upper torque link (17) and lower torque link (26) with bolt (24).
  - Attach the washer (23) and nut (21) to the bolt (24). Tighten the nut (21) with your hand and measure the space for the washer (25).
  - Machine the washer (25) or select other one listed at IPC 32-20-00, to get an axial play of 0.05 mm (0.002 in.).
  - Disconnect the torque link assemblies.
  - Attach the bolt (24) to the lower torque link (26).
  - Attach the washer (25) to the bolt (24) and connect the torque link assemblies.
  - Apply the lubricant MOLYKOTE DX to the thread of the nut (21).
  - Attach the nut (21) to the bolt (24).
  - Tighten the nut (21) with your hand and make sure that the bolt (24) can turn.
  - Apply a thin layer of corrosion inhibiting compound COR-BAN 27L to the thread of the bolt (22).
  - Attach the bolt (22), washer (20) and nut (19) to the nut (21).
  - Apply a torque of 3 to 4 N.m (26.5 to 35.4 lb.in) to the nut (19).
  - Safety the nut (19) with a new cotter pin (18).
- (4) Do the adjustment of the proximity switch (sensor). Refer to [AMM TASK 32-63-05-700-803-A/500](#) or [AMM TASK 32-63-05-700-804-A/500](#).
- (5) Apply sealant PR1826B2ALO, as follows (SRM 51-20-01):
- To the head of the bolts (8) (10) (12) (22)
  - To the nuts (1) (6) (14) (19) (21)
  - To the washers (2) (7) (13) (20)
  - To the cotter pins (3) (5) (15) (18)

- CAUTION: • IT IS NOT PERMITTED TO MIX GREASES OF DIFFERENT SPECIFICATIONS OR MANUFACTURERS. DO NOT MIX GREASES THAT HAVE DIFFERENT DESIGNATIONS. CLEAN ALL APPLICABLE PARTS BEFORE YOU USE A DIFFERENT GREASE.
- AEROSHELL GREASE 22 MUST NOT BE MIXED WITH AEROSHELL GREASE 33. IF YOU DO NOT OBEY THIS PRECAUTION, THE QUALITY OF THE LUBRICATION WILL DECREASE AND DAMAGE TO THE COMPONENTS CAN OCCUR.
  - BE CAREFUL WHEN YOU CONNECT THE HAND-PUMP GREASE GUN TO THE LUBRICATION FITTINGS. ALSO BE CAREFUL WHEN YOU DISCONNECT THE HAND-PUMP GREASE GUN FROM THE LUBRICATION FITTINGS. IF YOU ARE NOT CAREFUL, THE HAND-PUMP GREASE GUN CAN CAUSE DAMAGE TO THE LUBRICATION FITTINGS.

- (6) Use a grease gun to apply grease AEROSHELL 33 or AEROSHELL GREASE 22 to the grease nipples (29) of the torque links.

K. Follow-on

SUBTASK 842-002-A

- (1) Put the aircraft back to its initial condition:
- (a) Install the LH or RH NLG wheel assembly, as applicable ([AMM TASK 32-49-05-400-801-A/400](#)).
  - (b) Lower the aircraft and remove the jacks (AMM TASK 07-10-00-500-802-A/200 or AMM TASK 07-10-00-500-804-A/200).
  - (c) On the circuit breaker panel, close the ELEC PUMP 1, CMD, IND 1, and IND 2 circuit breaker and remove the DO-NOT-CLOSE tag from them.
  - (d) Do the procedure to restore the aircraft after the maintenance ([AMM TASK 20-00-00-910-801-A/200](#)).

CAUTION: EXAMINE ALL THE WORK AREAS TO MAKE SURE THAT YOU REMOVED ALL TOOLS AND EQUIPMENT AFTER YOU COMPLETED THE WORK. IF YOU DO NOT OBEY THIS PROCEDURE, DAMAGE TO THE AIRCRAFT CAN OCCUR.

- (e) Remove all tools, equipment, and unwanted materials from the work area.