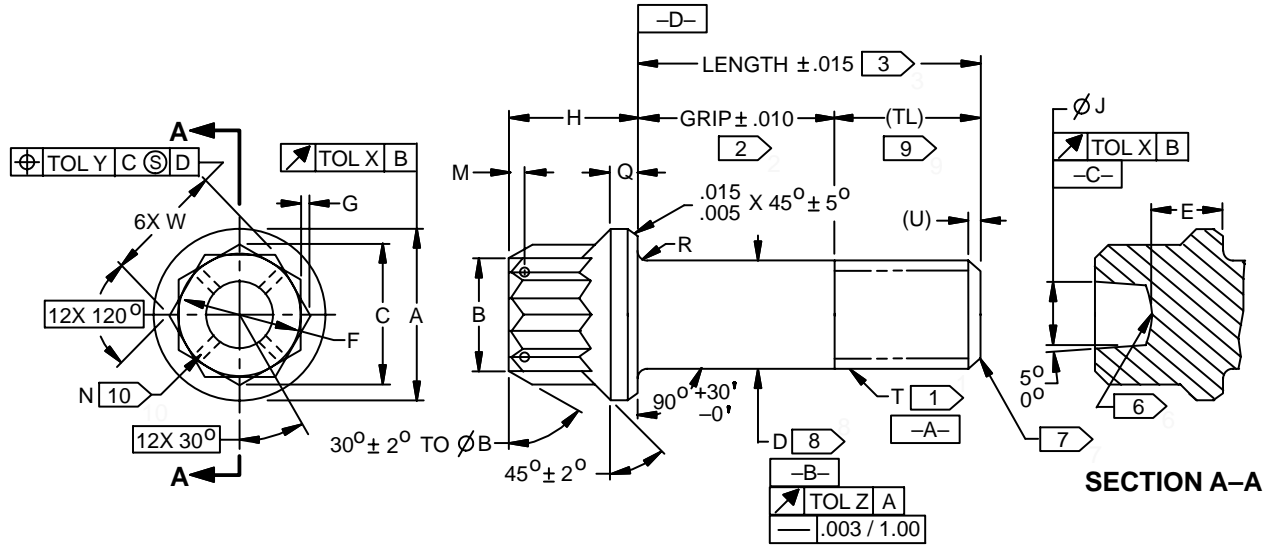


BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK



DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1982.
DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.
DIMENSIONS APPLY AFTER FINISH UNLESS OTHERWISE SPECIFIED.

TECHNICAL CHANGES IDENTIFIED BY REVISION BAR.

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD
SH 1 OF 10

BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)

BACB30FD
SH 1 OF 10

BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.

BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

TABLE I DIMENSIONS AND TOLERANCES

BOEING STANDARD NUMBER BACB30FD 5	T NOMINAL THREAD SIZE UNJF-3A 1	\varnothing A $\pm .005$	\varnothing B + .000 - .015	\varnothing C	
				MAX	MIN
3	.1900-32	.345	.250	.290	.277
4	.2500-28	.433	.312	.361	.347
5	.3125-24	.526	.375	.434	.418
6	.3750-24	.644	.437	.507	.490
7	.4375-20	.745	.500	.580	.561
8	.5000-20	.823	.562	.651	.637
9	.5625-18	.933	.625	.724	.703
10	.6250-18	1.045	.687	.797	.775
12	.7500-16	1.225	.812	.940	.917
14	.8750-14	1.433	.937	1.085	1.059
16	1.0000-12	1.620	1.062	1.229	1.200
18	1.1250-12	1.870	1.250	1.446	1.414
20	1.2500-12	2.120	1.312	1.517	1.484
22	1.3750-12	2.308	1.437	1.663	1.628
24	1.5000-12	2.495	1.625	1.879	1.842
28	1.7500-12	2.810	2.187	2.519	2.484

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD

SH 2

**BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)**

BACB30FD

SH 2

**BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.**

BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

TABLE I DIMENSIONS AND TOLERANCES (CONTINUED)

BOEING STANDARD NUMBER BACB30FD 5	Ø D								
	NOMINAL SIZE			.0156 OVERSIZE 4			.0312 OVERSIZE 4		
	BEFORE PLATE	AFTER PLATE		BEFORE PLATE	AFTER PLATE		BEFORE PLATE	AFTER PLATE	
	MIN	MAX	MIN	MIN	MAX	MIN	MIN	MAX	MIN
3	.1879	.1895	.1885	.2010	.2026	.2016	.2166	.2182	.2172
4	.2479	.2495	.2485	.2635	.2651	.2641	.2791	.2807	.2797
5	.3104	.3120	.3110	.3260	.3276	.3266	.3416	.3432	.3424
6	.3729	.3745	.3735	.3885	.3901	.3891	.4041	.4057	.4047
7	.4354	.4370	.4360	.4510	.4526	.4516	.4666	.4682	.4672
8	.4979	.4995	.4985	.5135	.5151	.5141	.5291	.5307	.5297
9	.5599	.5615	.5605	.5755	.5771	.5761	.5911	.5927	.5917
10	.6224	.6240	.6230	.6380	.6396	.6386	.6536	.6552	.6542
12	.7474	.7490	.7480	.7630	.7646	.7636	.7786	.7802	.7792
14	.8724	.8740	.8730	.8880	.8896	.8886	.9036	.9052	.9042
16	.9974	.9990	.9980	1.0130	1.0146	1.0136	1.0286	1.0302	1.0292
18	1.1219	1.1240	1.1225	1.1375	1.1396	1.1381	1.1531	1.1552	1.1537
20	1.2469	1.2490	1.2475	1.2625	1.2646	1.2631	1.2781	1.2802	1.2787
22	1.3719	1.3740	1.3725	1.3875	1.3896	1.3881	1.4031	1.4052	1.4037
24	1.4969	1.4990	1.4975	1.5125	1.5146	1.5131	1.5281	1.5302	1.5287
28	1.7464	1.7490	1.7470	1.7620	1.7646	1.7626	1.7776	1.7802	1.7782

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD

SH 3

**BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)**

BACB30FD

SH 3

**BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.**

BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

TABLE I DIMENSIONS AND TOLERANCES (CONTINUED)

BOEING STANDARD NUMBER BACB30FD 5	E MIN	Ø F MAX 11	G MIN	H ± .010	Ø J + .010 - .030	M ± .010	Ø N ± .005 10	Q ± .010
3	.092	.262	.013	.214	.156	.062	.037	.068
4	.135	.327	.017	.300	.180	.062	.037	.069
5	.162	.392	.021	.348	.215	.070	.055	.082
6	.197	.458	.026	.388	.260	.070	.055	.091
7	.228	.524	.030	.435	.320	.070	.055	.099
8	.254	.588	.034	.504	.380	.094	.055	.123
9	.287	.654	.038	.557	.440	.094	.055	.133
10	.327	.720	.042	.618	.500	.094	.055	.150
12	.380	.849	.052	.711	.570	.094	.055	.178
14	.438	.980	.060	.808	.650	.125	.055	.198
16	.493	1.110	.068	.928	.740	.125	.055	.222
18	.556	1.306	.081	1.051	.840	.125	.055	.258
20	.636	1.371	.085	1.155	.950	.125	.055	.269
22	.698	1.502	.094	1.266	1.070	.188	.055	.274
24	.750	1.695	.107	1.434	1.200	.188	.055	.335
28	.905	2.284	.147	1.650	1.488	.188	.055	.593

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD

SH 4

**BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)**

BACB30FD

SH 4

**BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.**

BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

TABLE I DIMENSIONS AND TOLERANCES (CONTINUED)

BOEING STANDARD NUMBER BACB30FD 5	R RAD		TL 9	U REF	Ø W DOUBLE HEX		TOLERANCES		
	MAX	MIN			MAX	MIN	X	Y	Z
3	.041	.031	.390	.039	.251	.243	.005	.004	.0045
4	.041	.031	.485	.045	.313	.304	.005	.004	.0045
5	.041	.031	.572	.052	.376	.367	.006	.005	.0045
6	.057	.047	.619	.052	.439	.430	.008	.006	.0045
7	.057	.047	.694	.062	.502	.492	.009	.008	.0060
8	.057	.047	.741	.062	.564	.553	.010	.008	.0060
9	.057	.047	.826	.068	.627	.616	.011	.009	.0060
10	.073	.063	.873	.068	.690	.679	.012	.010	.0060
12	.073	.063	.993	.078	.814	.803	.015	.012	.0060
14	.073	.063	1.194	.089	.940	.928	.018	.014	.0090
16	.073	.063	1.382	.104	1.064	1.052	.020	.016	.0090
18	.073	.063	1.587	.104	1.252	1.239	.022	.019	.0090
20	.089	.077	1.697	.104	1.314	1.301	.025	.021	.0090
22	.089	.077	1.822	.104	1.440	1.427	.028	.023	.0120
24	.089	.077	1.947	.104	1.627	1.614	.030	.023	.0120
28	.089	.077	2.505	.104	2.190	2.176	.030	.023	.0120

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD

SH 5

**BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)**

BACB30FD

SH 5

**BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.**

BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

NOTES

- 1> THREAD DIMENSIONS PER AS8879 EXCEPT MAXIMUM MAJOR DIAMETER SHALL BE .0010 LESS THAN MINIMUM D DIAMETER, (1.7500-12 IS SPECIFIED 1.7500-12 UNJ-3A). INCOMPLETE THREAD ADJACENT TO GRIP AND CHAMFER SHALL CONFORM TO BPS-F-69. SEE FINISH NOTE.
- 2> TO DETERMINE THE NOMINAL GRIP LENGTH, MULTIPLY THE GRIP LENGTH NUMBER BY .0625. THE GRIP LENGTH IS MEASURED FROM THE BOTTOM OF THE HEAD TO THE END OF THE FULL CYLINDRICAL PORTION OF THE SHANK.

TO DETERMINE THE GRIP LENGTH NUMBER, DIVIDE THE TOTAL THICKNESS OF PARTS BEING JOINED BY .0625. ROUND OFF DECIMALS TO NEXT LARGER WHOLE NUMBER.
- 3> TOLERANCE SHALL BE APPLIED TO A NOMINAL DIMENSION DETERMINED BY ADDING THE NOMINAL GRIP LENGTH (SEE 2>) AND THE NOMINAL THREAD LENGTH "TL" FROM TABLE I.
- 4> RESTRICTED USAGE, FOR REPAIR ONLY.
- 5> SEE CODING UNDER USAGE AND APPLICATION FOR COMPLETE BOEING PART NUMBER.
- 6> FLAT, CURVED OR ANGULAR BOTTOM OPTIONAL.
- 7> END SHALL BE FLAT AND CHAMFERED PER BPS-F-69.
- 8> RUNOUT OF "D" DIAMETER TO THREAD PITCH DIAMETER WITHIN "Z" FIM WHEN HELD ON THE PITCH DIAMETER OF THE COMPLETE THREADS NEAREST THE SHANK AND CHECKED ON THE SHANK WITHIN ONE DIAMETER OF THE THREAD RUNOUT.
- 9> "TL" IS NOT TO BE INSPECTED EXCEPT AS PART OF THE OVERALL BOLT LENGTH.
- 10> DRILL "N" DIAMETER FOUR HOLES WHEN "H" CODE IS SPECIFIED. OUTER PORTION OF HOLES MUST BE FREE FROM BURRS AND SHARP EDGES.
- 11> DISTANCE BETWEEN ROOTS OF OPPOSING ELEMENTS OF DOUBLE HEX.
- 12> SEE INACTIVATION APPLICABILITY BLOCK.
- 13> NO LONGER IN OPERATION. PARTS MANUFACTURED PRIOR TO JANUARY 17, 1994 MAY BE PROCURED AND USED UNTIL STOCK IS DEPLETED.
- 14> HUCK LAKEWOOD (FORMERLY DEUTSCH FASTENER CORP) IS NO LONGER IN OPERATION. SIZES 3 THRU 20, MANUFACTURED AT THAT FACILITY (CAGE CODE 97928) UNDER EITHER NAME PRIOR TO OCTOBER 1, 1999 MAY BE RECEIVED AND USED BY BOEING AND ITS SUBCONTRACTORS UNTIL STOCKS ARE DEPLETED.

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD**SH 6**

BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)

BACB30FD**SH 6**

BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.

BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

NOTES (CONTINUED)

- 15** ALCOA FASTENING SYSTEMS (TEMPLE), (FORMERLY FAIRCHILD – TEMPLE) IS NO LONGER IN BUSINESS. PARTS MANUFACTURED AT THAT FACILITY UNDER EITHER NAME (CAGE CODE 06950) PRIOR TO SEPTEMBER 1, 2006, MAY BE PROCURED AND USED BY BOEING AND ITS SUBCONTRACTORS UNTIL JUNE 1, 2010, PROVIDED THE ORIGINAL ALCOA FASTENING SYSTEMS (TEMPLE) DATA CERTIFICATIONS ACCOMPANY ALL SHIPMENTS ALONG WITH AN ALCOA FASTENING SYSTEMS CITY OF INDUSTRY, (UNRUH) CERTIFICATE OF CONFORMITY
- 16** FAIRCHILD FASTENERS (UNRUH) IS NOW ALCOA FASTENING SYSTEMS – INDUSTRY (UNRUH). THIS CHANGE WAS A NAME CHANGE ONLY. STOCK MANUFACTURED UNDER THE FAIRCHILD NAME MAY BE PROCURED AND USED UNTIL DEPLETED.
- 17** PB FASTENERS (CAGE CODE 27624) IS NO LONGER AN APPROVED SUPPLIER OF THIS PRODUCT. BOLTS (SIZES 3 THRU 18 ONLY) MANUFACTURED BEFORE DECEMBER 4, 2002 FROM THE 1700 W 132ND STREET, GARDENA CA FACILITY MAY BE RECEIVED UNTIL SUPPLIES ARE EXHAUSTED.

PROCUREMENT SPECIFICATION

BPS-F-69, CLASS 180FA4, EXCEPT AS NOTED.

MATERIAL

4340 PER AMS 6415 OR 8740 PER AMS 6322.

FINISH **12**

- NO CODE LETTER – CADMIUM FLUOBORATE PLATE PER NAS672, .0002 MINIMUM; .0004 MAXIMUM.
- CODE LETTER "P" – CADMIUM FLUOBORATE PLATE PER NAS672.

SURFACE TEXTURE

PER ASME B46.1 HEAD TO SHANK FILLET, THREAD FLANKS, THREAD ROOT. SHANK ("D" DIAMETER) AND BEARING SURFACE OF HEAD, 32 MICROINCHES Ra, OTHER SURFACES, 125 MICROINCHES Ra.

MARKING

BACB30FD PLUS NUMBER DESIGNATING NOMINAL DIAMETER, "X" OR "Y" AS APPLICABLE, MANUFACTURER'S SYMBOL/INSIGNIA PER MIL-HDBK-57 OR REGISTERED WITH THE U.S. PATENT AND TRADEMARK OFFICE (PTO) OF THE U.S. DEPARTMENT OF COMMERCE AND "P" WHEN APPLICABLE FOR .0003 MINIMUM PLATING. MARKING DEPTH .010 MAXIMUM. LOCATION: TOP OF HEAD OR SLOPING SURFACE OF FLANGE. ARRANGEMENT OPTIONAL.

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD

SH 7

**BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)**

BACB30FD

SH 7

**BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.**

BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

PROCUREMENT 17

AIR INDUSTRIES CORPORATION (CAGE CODE 06725) (FOR SIZES 3 THRU 10 ONLY)

ALCOA FASTENING SYSTEMS – INDUSTRY (TEMPLE) (CAGE CODE 06950) 15
(FOR SIZES 3 THRU 24 ONLY)

ALCOA FASTENING SYSTEMS – INDUSTRY (UNRUH) (CAGE CODE 1RC86) 16
(FOR SIZES 3 THRU 24 ONLY)

FAIRCHILD FASTENER CHATSWORTH OPERATIONS (CAGE CODE 9N513) 13
(FOR SIZES 3 THRU 24 ONLY)

HUCK INTERNATIONAL INC LAKEWOOD OPERATIONS (CAGE CODE 97928) 14
(FOR SIZES 3 THRU 20 ONLY)

SPS TECHNOLOGIES, AEROSPACE PRODUCTS DIVISION (CAGE CODE 56878)

VALLEY-TODECO INC (CAGE CODE 06710) (FOR SIZES 3 THRU 16 ONLY)

THE MANUFACTURERS LISTED IN BPS-F-69SUP AND THEIR AUTHORIZED DISTRIBUTORS ARE THE ONLY APPROVED SOURCES FOR THE ABOVE QUALIFIED PRODUCTS. SEE BPS-F-69SUP FOR PLANT ADDRESSES. NO CHANGES IN PRODUCT DESIGN, BASIC METHODS OF MANUFACTURE, PLANT SITE OR QUALITY LEVEL SHALL BE MADE WITHOUT PRIOR NOTIFICATION AND PRIOR APPROVAL IN WRITING FROM THE BOEING COMPANY. MANUFACTURERS OF COMPETITIVE PRODUCTS MAY APPLY TO A SUPPLIER MANAGEMENT AND PROCUREMENT DEPARTMENT OF THE BOEING COMPANY FOR QUALIFICATION. IF A MANUFACTURER IS SHOWN ON THIS STANDARD, BUT NOT LISTED IN THE SUPPLEMENT, CONTACT THE DIVISIONAL ENGINEERING STANDARDS FOCAL POINT OR ENGINEERING STANDARDS FOR VERIFICATION.

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD

SH 8

**BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)**

BACB30FD

SH 8

BOEING PART STANDARD

BOOK 23. DO NOT USE FOR NEW DESIGN.

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FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

USAGE AND APPLICATION INFORMATION

THESE BOLTS ARE THE SAME AS NAS624 THROUGH NAS644 EXCEPT FOR AS8879 THREAD, E4340 MATERIAL AND HIGHER QUALITY PER BPS-F-69.

MAXIMUM SERVICE TEMPERATURE

450 F (LIMIT FOR CADMIUM PLATE).

MATING PARTS

■ BACN11Z NUT, BACW10BP PLAIN OR CSK WASHER.

CODING

FIRST DASH NUMBER DESIGNATES NOMINAL THREAD SIZE PER TABLE I.

LETTER "H" FOLLOWING FIRST DASH NUMBER DESIGNATES "DRILLED HEAD".

DASH "-" FOLLOWING FIRST DASH NUMBER DESIGNATES "UNDRILLED HEAD".

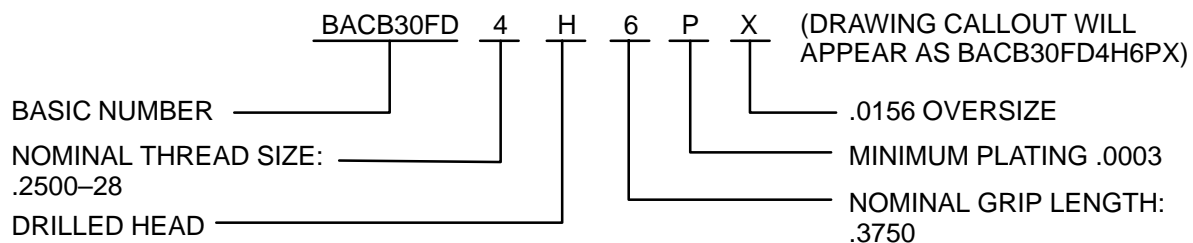
SECOND DASH NUMBER DESIGNATES NOMINAL GRIP LENGTH IN .0625 INCREMENTS.

LETTER "P" FOLLOWING SECOND DASH NUMBER DESIGNATES MINIMUM PLATING .0003.

NO LETTER "P" FOLLOWING SECOND DASH NUMBER DESIGNATES MINIMUM PLATING .0002.

LETTER "X" FOLLOWING SECOND DASH NUMBER DESIGNATES .0156 OVERSIZE.

LETTER "Y" FOLLOWING SECOND DASH NUMBER DESIGNATES .0312 OVERSIZE.

EXAMPLE OF PART NUMBER

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD

SH 9

**BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)**

BACB30FD

SH 9

**BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.**

BOOK 23. DO NOT USE FOR NEW DESIGN.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

SEE D-590-PREFACE (INDEX) FOR INACTIVATION DEFINITIONS. SEE
D-590-SUPERSESSION-LIST FOR SUPERSESSION CLASS DEFINITIONS AND SUPERSESSION
LIST.

INACTIVATION APPLICABILITY

BCA, IDS –

BACB30FD()-(), BACB30FD()-()X AND BACB30FD()-()Y ARE INACTIVE
FOR DESIGN AND PROCUREMENT.
BACB30FD()-()P, BACB30FD()-()PX AND BACB30FD()-()PY ARE CLASS II
SUPERSESSIONS, RESPECTIVELY.

BACB30FD()H(), BACB30FD()H()X AND BACB30FD()H()Y ARE INACTIVE
FOR DESIGN AND PROCUREMENT.
BACB30FD()H()P, BACB30FD()H()PX AND BACB30FD()H()PY ARE
CLASS II SUPERSESSIONS, RESPECTIVELY.

BCA –

BACB30FD(3 THRU 12)-()P, BACB30FD(3 THRU 12)-()PX AND
BACB30FD(3 THRU 12)-()PY ARE INACTIVE FOR DESIGN AND PROCUREMENT.
BACB30LE(3 THRU 12)-(), BACB30LE(3 THRU 12)-()X AND
BACB30LE(3 THRU 12)-()Y ARE CLASS II SUPERSESSIONS, RESPECTIVELY.

BACB30FD(3 THRU 12)H()P, BACB30FD(3 THRU 12)H()PX AND
BACB30FD(3 THRU 12)H()PY ARE INACTIVE FOR DESIGN AND PROCUREMENT.
BACB30LE(3 THRU 12)H(), BACB30LE(3 THRU 12)H()X AND
BACB30LE(3 THRU 12)H()Y ARE CLASS II SUPERSESSIONS, RESPECTIVELY.

DATE 12-AUG-1960 REV (AD) 06-FEB-2008

CAGE CODE 81205

BACB30FD

SH 10

**BOLT,
EXTERNAL WRENCHING, 180 KSI MIN
TENSILE, 102 KSI MIN SHEAR, ALLOY
STEEL, 450 F (NOMINAL AND OVERSIZE)**

BACB30FD

SH 10

**BOEING PART STANDARD
BOOK 23. DO NOT USE FOR NEW DESIGN.**