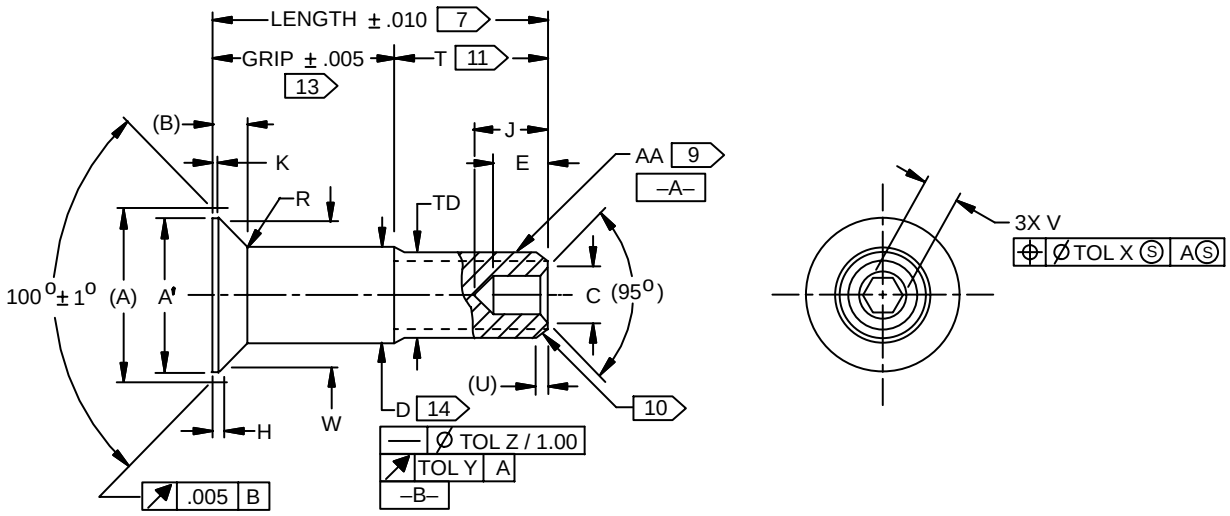


DIMENSIONING AND TOLERANCING PER ANSI Y14.5M–1982.
DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.
DIMENSIONS APPLY AFTER FINISH UNLESS OTHERWISE SPECIFIED.

TABLE I

BOEING STANDARD NUMBER BACB30FN 8	AA THREAD SIZE PER AS8879 9	Ø A REF MAX 1	Ø A′ MIN	B REF 1	Ø C ± .010	Ø D						
						BEFORE FINISH				AFTER FINISH		
						CAD PLATE	CAD PLATE	ALUM COAT ON ALLOY STEEL	ALUM COAT, SOLID FILM ON CRES	ALL 5	ALL EXCEPT PASSIVATE WITH NO LUBE OR CETYL	PASSIVATE WITH NO LUBE OR CETYL
						MAX	MIN	MIN	MIN	MAX	MIN	MIN
5	UNJC–3A .1640–32	.265	.233	.043	2	.1625	.1619	.1617	.1621	.1635	.1625	.1630
6	UNJF–3A .1900–32	.305	.258	.048	2	.1885	.1879	.1877	.1881	.1895	.1885	.1890
8	.2500–28	.399	.350	.063	.132	.2485	.2479	.2477	.2481	.2495	.2485	.2490
10	.3125–24	.479	.429	.070	.170	.3110	.3104	.3102	.3106	.3120	.3110	.3115
12	.3750–24	.566	.515	.081	.207	.3735	.3729	.3727	.3731	.3745	.3735	.3740
14	.4375–20	.674	.605	.100	.243	.4360	.4354	.4352	.4356	.4370	.4360	.4365
16	.5000–20	.761	.690	.110	.279	.4985	.4979	.4977	.4981	.4995	.4985	.4990

TECHNICAL CHANGES IDENTIFIED BY REVISION BAR.

TABLE I (CONTINUED)

BOEING STANDARD NUMBER BACB30FN [8]	E MIN	H GAGE PROTRUSION [3]		J MAX	K MAX	R RAD ± .005	T [11]	∅ TD [9]	
		MAX	MIN					MAX	MIN
5	.115	.0215	.0187	.178	.010	.020	.312	.1595	.1570
6		.0248	.0216	.178	.015	.025	.325	.1840	.1810
8	.130	.0275	.0237	.200			.395	.2440	.2410
10	.150	.0302	.0260	.240		.035	.500	.3060	.3020
12	.180	.0333	.0283	.275			.545	.3680	.3640
14	.210	.0430	.0376	.315	.022	.045	.635	.4310	.4260
16	.240	.0455	.0395	.360			.685	.4930	.4880

TABLE I (CONTINUED)

BOEING STANDARD NUMBER BACB30FN [8]	U REF	V HEX		∅ W GAGE +.0002 –.0000 [3]	TOLERANCE		
		MAX	MIN		X	Y	Z
5	.031	.0801	.0791	.2109	.010	.0045	.0040
6		.0806		.2438			
8		.0967	.0947	.3312		.	.0030
10	.047	.1295	.1270	.4045	.012		
12		.1617	.1582	.4852	.014	.0060	.0025
14		.1930	.1895	.5696	.017		
16		.2242	.2207	.6498	.020		

NOTES

[1] DIMENSIONS “A” AND “B” ARE REFERENCE DIMENSIONS WITH CALCULATED LIMITS RESULTING FROM TOLERANCES ON “W”, “H”, “D”, “K” AND HEAD ANGLE.

[2] ON SIZE 5 ONLY, COUNTERSINK TO A DEPTH TO BREAK CORNERS OF THE DRIVING HEX; ON SIZE 6, COUNTERSINK TO A DIAMETER OF .104 TO .119.

[3] INSPECT HEAD PROTRUSION “H” AT GAGE DIAMETER “W” IN ACCORDANCE WITH BOEING DOCUMENT D–11805, INSPECTION METHOD A.

[4] INSPECTION REPORT SHALL PROVIDE NAME OF COATING APPLICATOR, IF OTHER THAN BOLT MANUFACTURER. SEE QPL TO BMS10–85 FOR APPROVED APPLICATORS.

[5] MAXIMUM “D” DIAMETER MAY BE EXCEEDED BY .0002 FOR SOLID FILM LUBED PARTS.

[6] TO DETERMINE THE GRIP LENGTH NUMBER, DIVIDE THE TOTAL THICKNESS OF PARTS BEING JOINED BY .0625. ROUND OFF DECIMALS TO NEXT LARGER WHOLE NUMBER.

[7] THE TOLERANCE SHALL BE APPLIED TO A NOMINAL LENGTH DETERMINED BY ADDING THE NOMINAL GRIP LENGTH (GRIP LENGTH NUMBER TIMES .0625) AND “T” FROM TABLE I.

NOTES (CONTINUED)

8 FOR COMPLETE BOEING PART NUMBER SEE CODING UNDER USAGE AND APPLICATION.

9 MAJOR DIAMETER SHALL CONFORM TO “TD”.

10 END SHALL BE FLAT AND CHAMFERED PER BPS–F–67.

11 THE “T” DIMENSION DOES NOT HAVE AN APPLIED TOLERANCE. “T” IS NOT TO BE INSPECTED, BUT IS USED FOR CALCULATION OF OVERALL BOLT LENGTH. 7

12 BOLTS USED IN LIQUID OXYGEN (LOX) SYSTEMS. BOLTS SHALL NOT HAVE LUBRICANT, PAINT OR DYE.

13 APPLY TOLERANCE TO A NOMINAL GRIP LENGTH DETERMINED BY MULTIPLYING THE GRIP LENGTH NUMBER BY .0625. GRIP LENGTH IS MEASURED FROM THE TOP OF THE HEAD TO THE END OF THE FULL CYLINDRICAL PORTION OF THE SHANK.

14 RUNOUT OF “D” DIAMETER TO THREAD PITCH DIAMETER SHALL BE WITHIN “Y” 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.

15 LOTS PRODUCED AFTER JUNE 30, 1995 SHALL HAVE THIS MARKING. PARTS IN THE SYSTEM WITH THE OLD DEUTSCH SYMBOL OF DA OR DF ARE ACCEPTABLE.

16 HUCK LAKEWOOD (FORMERLY DEUTSCH FASTENER CORP) IS NO LONGER IN OPERATION. PARTS MANUFACTURED AT THAT FACILITY (CAGE CODE 97928) UNDER EITHER NAME PRIOR TO OCTOBER 1, 1999 MAY BE PROCURED AND USED BY BOEING AND ITS SUBCONTRACTORS UNTIL STOCKS ARE DEPLETED.

17 FAIRCHILD FASTENERS (TEMPLE) IS NOW ALCOA FASTENING SYSTEMS – INDUSTRY (TEMPLE). THIS CHANGE WAS A NAME CHANGE ONLY. STOCK MANUFACTURED UNDER THE FAIRCHILD NAME MAY BE PROCURED AND USED UNTIL DEPLETED.

18 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.

19 HUCK INTERNATIONAL INC (CARSON) IS NOW ALCOA FASTENING SYSTEMS – CARSON. THIS CHANGE WAS A NAME CHANGE ONLY. STOCK MANUFACTURED UNDER THE HUCK NAME MAY BE PROCURED AND USED UNTIL DEPLETED.

PROCUREMENT SPECIFICATION

BPS–F–67.

MATERIAL

ALLOY STEEL – 4130 PER AMS–S–6758, 4140 PER AMS 6382, 8740 PER AMS 6322, AMS 6325 OR AMS 6327, OR 4340 PER AMS 6415 OR AMS 6484.

A286 CRES – PER AMS 5731 OR AMS 5737.

SHEAR AND TENSILE STRENGTH PER BPS–F–67.

FINISH

ALUMINUM PIGMENTED COATING PER BMS10–85, TYPE I, CLASS A. 4

CADMIUM PLATING PER AMS–QQ–P–416 TYPE II CLASS 2. EMBRITTLEMENT TEST PER BPS–F–67.

PASSIVATE PER AMS–QQ–P–35, TYPE II OR VIII.

SURFACE TEXTURE

PER ASME B46.1. HEAD TO SHANK FILLET, THREAD ROOT, THREAD FLANKS AND SHANK, 32 MICROINCHES Ra; BEARING SURFACE OF HEAD, 63 MICROINCHES Ra; OTHER SURFACES, 125 MICROINCHES Ra.

BROACH TEARS ON HEXAGON WALLS OF ALLOY STEEL FASTENERS ARE PERMITTED TO THE DEPTHS LISTED IN TABLE II, MEASURED NORMAL TO THE FLATS. CRACKS EMANATING FROM THE CORNERS OF THE HEXAGON SOCKET ARE UNACCEPTABLE.

TABLE II

NOMINAL DIAMETER	MAXIMUM DEPTH
.1900 AND SMALLER	.002
.2500 THROUGH .3750	.003
.4375 AND LARGER	.005

LUBRICATION

CETYL ALCOHOL PER MIL–L–87132, TYPE I OR TYPE III, GRADE OPTIONAL.

SOLID FILM PER MIL–L–46010, TYPE I (INACTIVE FOR DESIGN AND PROCUREMENT, SEE MIL–L–46010SUP) OR AS5272, TYPE I. AS5272 SHALL BE IN ACCORDANCE WITH THE QPL IN AS5272SUP.

MARKING

BOLT HEADS SHALL BE MARKED WITH MANUFACTURER'S BASIC NUMBER AND SYMBOL/INSIGNIA PER TABLE IV OR REGISTERED WITH THE U.S. PATENT AND TRADEMARK OFFICE (PTO) OF THE U.S. DEPARTMENT OF COMMERCE. MARKING WITH THE SIZE DASH NUMBER IS OPTIONAL. MARKING SHALL BE INDENTED .010 MAXIMUM, ARRANGEMENT OPTIONAL.

COLOR CODE CHAMFERED ENDS OF BOLTS WITH DYE OR PAINT AS SHOWN IN TABLE III. APPLY COLOR CODE TO END OF BOLT BEFORE CETYL ALCOHOL AND AFTER SOLID FILM LUBRICATION. COVERAGE OF DYE OR PAINT MAY INCLUDE CHAMFER PLUS ONE THREAD PITCH.

PROCUREMENT

AIR INDUSTRIES CORP (CAGE CODE 06725)

ALCOA FASTENING SYSTEMS – CARSON (CAGE CODE 17446) 19
(FOR SIZES 5 THRU 8, ALLOY STEEL ONLY)

ALCOA FASTENING SYSTEMS – INDUSTRY (TEMPLE) (CAGE CODE 06950) 17
(FOR SIZE 5 THRU 12)

ALCOA FASTENING SYSTEMS – INDUSTRY (UNRUH) (CAGE CODE 1RC86) 18
(FOR SIZE 5 THRU 12)

HI–SHEAR CORP (CAGE CODE 73197)

HUCK INTERNATIONAL INC, LAKEWOOD OPERATIONS (CAGE CODE 97928) 15 16

SPS TECHNOLOGIES, AEROSPACE PRODUCTS DIV (CAGE CODE 56878)

WEST COAST AEROSPACE INC (CAGE CODE 60516)

THE MANUFACTURERS LISTED IN BPS–F–67SUP AND THEIR AUTHORIZED DISTRIBUTORS ARE THE ONLY APPROVED SOURCES FOR THE ABOVE QUALIFIED PRODUCTS. SEE BPS–F–67SUP 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.

PATENT NOTICE:

THIS IS A MANUFACTURER–DESIGNED PRODUCT. BOEING MAKES NO REPRESENTATION WHATEVER REGARDING PATENT OR OTHER RIGHTS AFFECTING THE PRODUCT. THE LISTING OF ANY SUPPLIER DOES NOT IMPLY ANY DETERMINATION BY THE BOEING COMPANY OR BY ANY OTHER LISTED MANUFACTURER AS TO THE RIGHTS OF SUCH MANUFACTURER.

HI–SHEAR CORPORATION STATES THAT PATENT NOS. 2,940,495; 3,138,987; 3,390,906 AND DESIGN 191,883, ARE PERTINENT TO ITS PRODUCT.

FOR STATUS OF INACTIVATION
SEE APPLICABILITY BLOCK

USAGE AND APPLICATION INFORMATION

THESE BOLTS WITH BACC30M COLLARS MAY BE USED TO REPLACE SHEAR LOCKBOLTS AND COLLARS OR HI–SHEAR RIVETS AND COLLAR, AS AUTHORIZED IN BAC5004–2.

FOR .0156, .0312 AND .0468 OVERSIZE BOLTS, SEE BACB30FQ, BACB30KF AND BACB30LW RESPECTIVELY.

THESE BOLTS AND MATING COLLARS, WITH COUNTERBORE, ARE DESIGNED SO THAT NOMINAL GRIP DIMENSION EQUALS MAXIMUM MATERIAL THICKNESS. ALLOWABLE MINIMUM MATERIAL THICKNESS IS NOMINAL GRIP DIMENSION LESS .062. WHEN MATERIAL THICKNESS EQUALS MINIMUM GRIP, .062 OF UNTHREADED SHANK ENTERS COUNTERBORE OF NUT. THIS DESIGN AVOIDS THREADS IN BEARING.

INSTALL PER BAC5004–2 OR BAC5063, AS APPLICABLE.

CODING

FIRST DASH NUMBER DESIGNATES NOMINAL THREAD SIZE IN .03125 INCREMENTS.

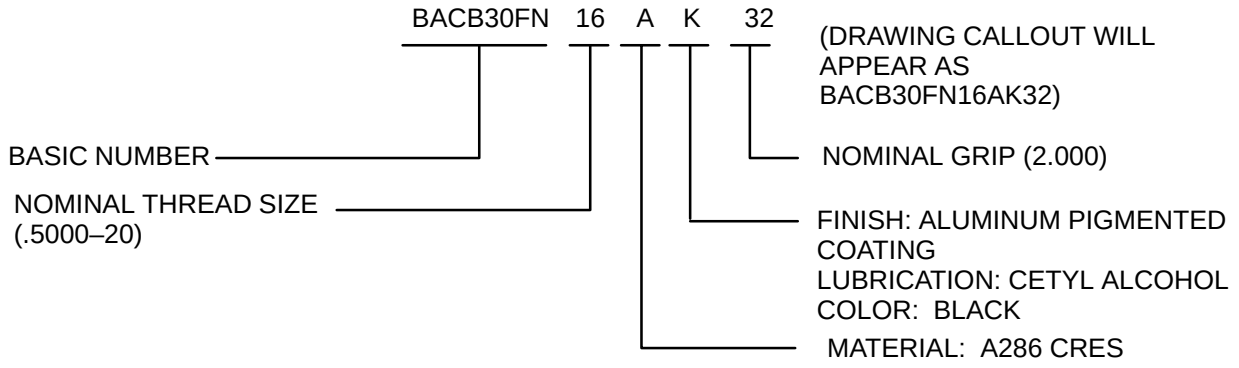
LETTER CODES FOLLOWING THE FIRST AND SECOND DASH NUMBERS DESIGNATE MATERIAL, FINISH, LUBRICANT AND COLOR AS SHOWN IN TABLE III.

SECOND DASH NUMBER DESIGNATES GRIP LENGTH IN .0625 INCREMENTS. 6

TABLE III

BOEING STANDARD NUMBER BACB30FN	MATERIAL	FINISH	LUBRICANT	COLOR
( )–( )	ALLOY STEEL	CADMIUM PLATE	CETYL ALCOHOL	NONE
( )A( )	A286 CRES	CADMIUM PLATE	CETYL ALCOHOL	GREEN
( )A( )U	A286 CRES	PASSIVATED	CETYL ALCOHOL	NONE
( )A( )N 12	A286 CRES	CADMIUM PLATE	NONE	NONE
( )A( )NU 12	A286 CRES	PASSIVATED	NONE	NONE
( )K( )	ALLOY STEEL	ALUMINUM PIGMENTED COAT	CETYL ALCOHOL	BLACK
( )AK( )	A286 CRES	ALUMINUM PIGMENTED COAT	CETYL ALCOHOL	BLACK
( )A( )SU	A286 CRES	PASSIVATED	SOLID FILM LUBE	NONE

EXAMPLE OF PART NUMBER



FASTENER CODE

SEE BACD2074 FOR APPLICABLE FASTENER CODES.

TABLE IV

MANUFACTURER	MANUFACTURER'S BASIC NUMBER			HEAD MARKING SYMBOL/ INSIGNIA
	ALLOY STEEL	A286 CRES		
		PASSIVATED	CADMIUM PLATED, ALUMINUM COATED	
AIC	HL19 OR L–839	HL41 OR L–839C	HL441 OR L–839C	
FAIRCHILD	HL19	HL41	HL441	VS OR O
HI–SHEAR	HL19	HL41	HL441	H, HS OR NONE
HUCK 15	HL19	HL41	HL441	
SPS	HL19	HL41	HL441	SPS, OR S
WEST COAST	HL19	HL41	HL441	WC
MANUFACTURER'S BASIC NUMBER AND SYMBOL/INSIGNIA LISTED ARE FOR HEAD MARKING AND ARE NOT TO BE USED FOR DRAWING CALLOUT.				

SEE D–590–PREFACE (INDEX) FOR INACTIVATION DEFINITIONS. SEE D–590–SUPERSESSION–LIST FOR SUPERSESSION CLASS DEFINITIONS AND SUPERSESSION LIST. SEE D–590–BOEING–TO–VENDOR FOR VENDOR PART NUMBERS.

INACTIVATION APPLICABILITY

BCA – BACB30FN( )–( ) IS INACTIVE FOR DESIGN AND PROCUREMENT.
BACB30FN( )A( ) IS A CLASS II SUPERSESSION.

BACB30FN( )K( ) IS INACTIVE FOR DESIGN AND PROCUREMENT.
BACB30FN( )A( ) IS A CLASS II SUPERSESSION.

BCA, BH, IDS – BACB30FN( )–( )K AND BACB30FN( )A( )K ARE INACTIVE FOR DESIGN AND PROCUREMENT.
BACB30FN( )K( ) AND BACB30FN( )AK( ) ARE CLASS II SUPERSESSIONS, RESPECTIVELY.