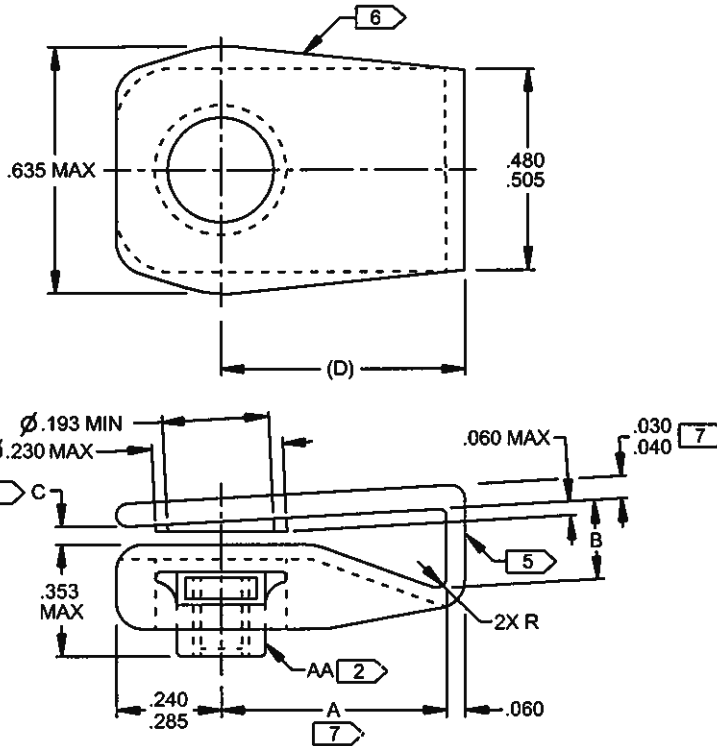


BCA	F	IDS	N	BH	N					
NEW DESIGN APPROVAL: P=PARTIAL, F=FULL, N=NONE										



DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.  
 TOLERANCES: ± .010 UNLESS OTHERWISE SPECIFIED.  
 DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.  
 DIMENSIONS APPLY AFTER FINISH UNLESS OTHERWISE SPECIFIED.

TABLE I

BOEING STANDARD NUMBER BACN11AL 4	AA NOMINAL THREAD SIZE PER AS8879 UNJF-3B	A 7	B	C MAX	D REF	R MAX
1	.1900-32	.745	.175	.060	.795	.045
2			.315	.180		

TECHNICAL CHANGES IDENTIFIED BY REVISION BAR.

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CAGE CODE 81205

**BACN11AL**  
SH 1 OF 12

**NUT,  
 CLIP-ON, SELF-LOCKING,  
 CORROSION RESISTANT NUT,  
 PLASTIC CLIP, 450F**

**BACN11AL**  
SH 1 OF 12

**NOTES**

- ① CLIP OPENING SHALL BE SHAPED TO FACILITATE EASY INSTALLATION ON THE RESPECTIVE RANGE OF SHEET THICKNESSES LISTED IN TABLE V. IF ROUNDED LEAD IS USED, MAXIMUM PROTRUSION SHALL BE .040. MEASURED PARALLEL TO NOSE END.
- ② NUT SHALL BE SELF-LOCKING. NUT CONFIGURATION AND RETENTION METHOD ARE MANUFACTURER'S OPTION.
- ③ RADIAL FLOAT OBTAINED BY INCREASING INSTALLATION HOLE DIAMETER. NOT TO EXCEED MAXIMUM DIAMETER SPECIFIED.
- ④ SEE CODING UNDER USAGE AND APPLICATION SECTION FOR COMPLETE BOEING PART NUMBER.
- ⑤ .030 MAXIMUM INJECTION GATE BURR PERMISSIBLE IN THIS AREA.
- ⑥ GRAPHIC DEPICTION SHOWS PART ENVELOPE. PARTS MAY VARY IN FORM AND SHAPE BUT SHALL MEET DIMENSIONAL REQUIREMENTS.
- ⑦ PARTS MANUFACTURED PRIOR TO APRIL 1, 2005 MAY HAVE "A" DIMENSIONS OF .725 - .755. PARTS MANUFACTURED PRIOR TO 26 SEPTEMBER, 2006 MAY HAVE CLIP THICKNESS OF .020 TO .050.
- ⑧ TORQUE REUSABILITY TEST FOR "CM" CODE PARTS SHALL BE PERFORMED USING BACS12GU3K( ) SCREWS OR SCREWS HAVING LIKE MATERIAL, STRENGTH LEVEL, FINISH, AND THREAD DIMENSIONS.
- ⑨ THE MONADNOCK CO IS NOW LISI AEROSPACE - MONADNOCK PRODUCTS. THIS CHANGE WAS A NAME CHANGE ONLY. STOCK MANUFACTURED UNDER THE "THE MONADNOCK CO" NAME MAY BE PROCURED AND USED UNTIL DEPLETED.

**PROCUREMENT SPECIFICATION**

BPS-N-70 CLASS 125TC4, EXCEPT AS NOTED.

**ACCEPTANCE TEST**

THE TORQUE-OUT TEST AND NUT ENGAGEMENT AND RETENTION TEST, DESCRIBED UNDER QUALIFICATION REQUIREMENTS ON THIS STANDARD, SHALL BE USED AS RECEIVING INSPECTION TESTS. ATTRIBUTE SAMPLING FOR TORQUE-OUT TESTS PER BPS-N-70. EIGHT RANDOM SAMPLES SHALL BE USED FOR NUT ENGAGEMENT AND RETENTION TEST. THE RECEIVING FACILITY HAS THE RIGHT TO APPLY ANY OR ALL QUALIFICATION TESTS TO ANY PRODUCTION LOT OF PARTS.

SUPPLIER SHALL PROVIDE ON THE INSPECTION REPORT THE MANUFACTURER AND LOT NUMBER OF THE NUT ELEMENT IF OTHER THAN THE CLIP-NUT ASSEMBLY MANUFACTURER.

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CAGE CODE 81205

**BACN11AL**  
SH 2

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 2

**PROCUREMENT SPECIFICATION (CONTINUED)**

**QUALIFICATION REQUIREMENTS**

IN ADDITION TO THE REQUIREMENTS LISTED IN THE "PROCUREMENT SPECIFICATION" SECTION, FIVE NUTS OF EACH PART NUMBER SHALL PASS EACH OF THE TESTS LISTED BELOW.

**TORQUE-OUT TEST PROCEDURE**

PLACE CLIP-NUT ASSEMBLY ON TEST FIXTURE AS SHOWN IN FIGURE 4 WITH PLATE THICKNESS "T", AND EDGE DISTANCE PER TABLE II. INSERT SCREW THROUGH BOTTOM OF NUT AND ENGAGE THREADS UNTIL SCREW EXTENDS AT LEAST 4 THREADS BEYOND TOP OF NUT. ENGAGE SCREW WITH INTERNAL THREADS OF TORQUE-OUT TEST BOLT PER FIGURE 3. APPLY TORQUE TO TORQUE-OUT TEST BOLT WITH CALIBRATED TORQUE WRENCH UNTIL NUT OR CLIP FAILS. RECORD TORQUE AT FAILURE.

**ACCEPTANCE CRITERIA**

IF EITHER THE NUT OR CLIP FAILS AT LESS THAN THE MINIMUM TORQUE-OUT VALUE PER TABLE II, THE CLIP-NUT ASSEMBLY SHALL BE CONSIDERED DEFECTIVE.

**NUT ENGAGEMENT AND RETENTION TEST PROCEDURE**

PLACE CLIP-NUT ASSEMBLY ON TEST FIXTURE AS SHOWN IN FIGURE 5 WITH PLATE THICKNESS "W" AND EDGE DISTANCE "E" PER TABLE III. SCREWS ATTACHING BASE AND LOWER PLATES SHALL BE ONLY HAND TIGHT. FIXTURE SHALL BE RETAINED DURING TEST BY CLAMPING ONTO EITHER PLATE, BUT NOT BOTH. SELECT THE BACS12GP3L( ) (OR EQUIVALENT) SCREW WITH THE REQUIRED GRIP LENGTH PER TABLE III, WHICH CORRESPONDS TO THE EXTENSION DIMENSION "H" PER TABLE III. USING A 25 TO 35 INCH-POUND CALIBRATED PNEUMATIC SCREW DRIVER (APPROXIMATELY 500 RPM), WITH A NUMBER 2 NASM9006 DRIVING BIT, PUSH THE SCREW INTO THE TEST FIXTURE UNTIL THE SCREW IS SEATED IN THE COUNTERSINK AND THE CLIP-NUT ASSEMBLY IS FULLY EXTENDED AS SHOWN IN SECTION A-A, FIGURE 5. START THE SCREW DRIVER AND FULLY INSTALL THE SCREW. REVERSE THE SCREW DRIVER AND REMOVE THE SCREW FROM THE CLIP-NUT ASSEMBLY. REMOVE THE TOP TEST PLATE AND ATTEMPT TO DISLodge CLIP-NUT ASSEMBLY FROM THE LOWER TEST PLATE BY SHAKING IN ALL ORIENTATIONS. REPEAT THE ABOVE TEST PROCESS FOR TEN COMPLETE CYCLES. OBTAIN A NEW BACS12GP3L( ) (OR EQUIVALENT) SCREW FOR EACH CYCLE.

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CAGE CODE 81205

**BACN11AL**

**SH 3**

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**

**SH 3**

**PROCUREMENT SPECIFICATION (CONTINUED)**

**ACCEPTANCE CRITERIA**

THE CLIP-NUT ASSEMBLY SHALL BE CONSIDERED DEFECTIVE IF DURING ANY INDIVIDUAL TEST THE SCREW THREADS FAIL TO ENGAGE THE NUT THREADS, OR IF THE SCREW FAILS TO FULLY INSTALL IN (OR BE REMOVED FROM) THE CLIP-NUT ASSEMBLY, OR IF THE CLIP-NUT ASSEMBLY FAILS TO RETAIN ITSELF ON THE LOWER TEST PLATE WHEN THE SCREW AND TOP PLATE ARE REMOVED. THE CLIP-NUT ASSEMBLY SHALL NOT SHOW ANY EVIDENCE OF CRACKING.

**RETENTION**

FOR THE SPECIFIED RANGE OF SHEET THICKNESSES PER TABLE V, THE RETENTION SHALL BE POSITIVE TO PREVENT THE NUT ASSEMBLY FROM READILY BEING DISLODGED FROM ITS INSTALLATION. EDGES OF NUT OR CLIP CONTACTING STRUCTURE ON WHICH NUT IS INSTALLED SHALL NOT SCRAPE THROUGH FINISH ON INSTALLATION.

DATE 18-NOV-2002 REV (D) 26-SEP-2006

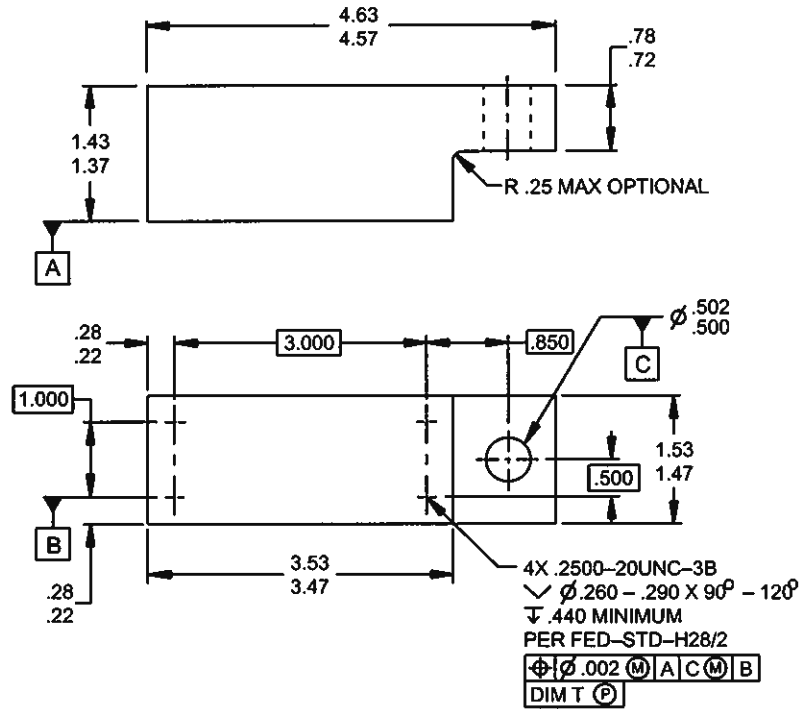
CAGE CODE 81205

**BACN11AL**  
SH 4

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 4

PROCUREMENT SPECIFICATION (CONTINUED)



TEST BLOCK MATERIAL

2024-T4 ALUMINUM BAR PER AMS-QQ-A-225/6.

TEST BLOCK FINISH

CHEMICAL CONVERSION COAT TO MEET THE REQUIREMENTS OF MIL-C-5541, CLASS 1A OR ANODIZE TO MEET THE REQUIREMENTS OF MIL-A-8625, TYPE I, CLASS 1.

FIGURE 1 TORQUE-OUT TEST BLOCK (SEE TABLE II)

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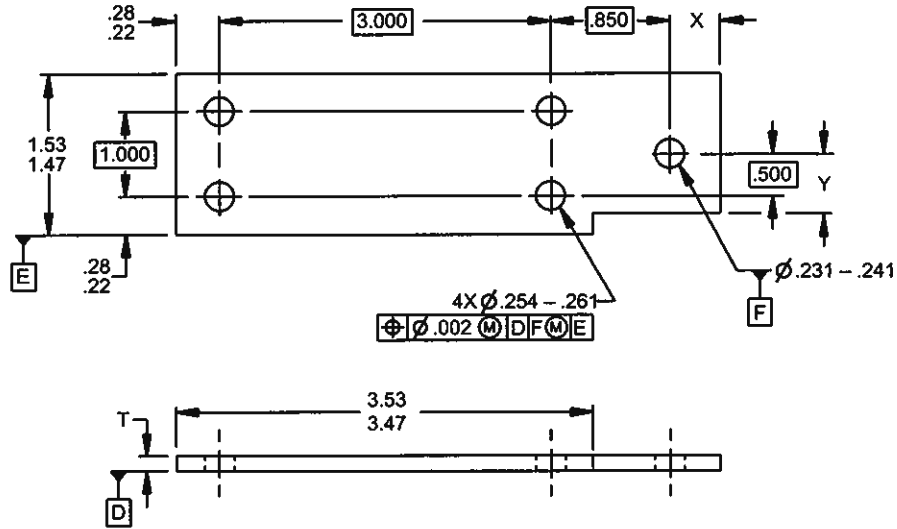
CAGE CODE 81205

**BACN11AL**  
SH 5

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 5

PROCUREMENT SPECIFICATION (CONTINUED)



TEST PLATE MATERIAL

STEEL; HARDENED TO 45 - 48 HRC.

TEST PLATE FINISH

OPTIONAL.

FIGURE 2 TORQUE-OUT TEST PLATE (SEE TABLE II)

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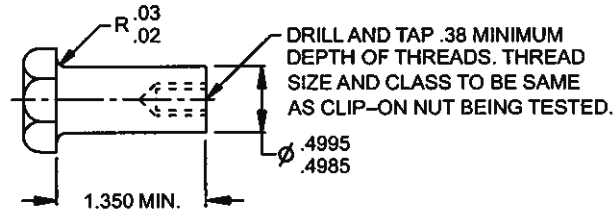
CAGE CODE 81205

**BACN11AL**  
SH 6

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 6

**PROCUREMENT SPECIFICATION (CONTINUED)**



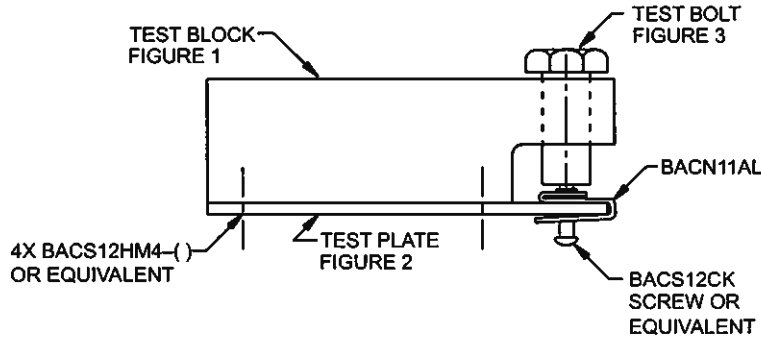
**TEST BOLT MATERIAL**

MAKE FROM BACB30NF8-22, BACB30LM8-22 OR LONGER, OR .742 - .751, 8740 STEEL HEX BAR HARDENED TO 36 - 40 HRC.

**TEST BOLT FINISH**

CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3.

**FIGURE 3 TORQUE-OUT TEST BOLT**



**FIGURE 4 TORQUE-OUT TEST FIXTURE**

**TABLE II TORQUE-OUT TEST**

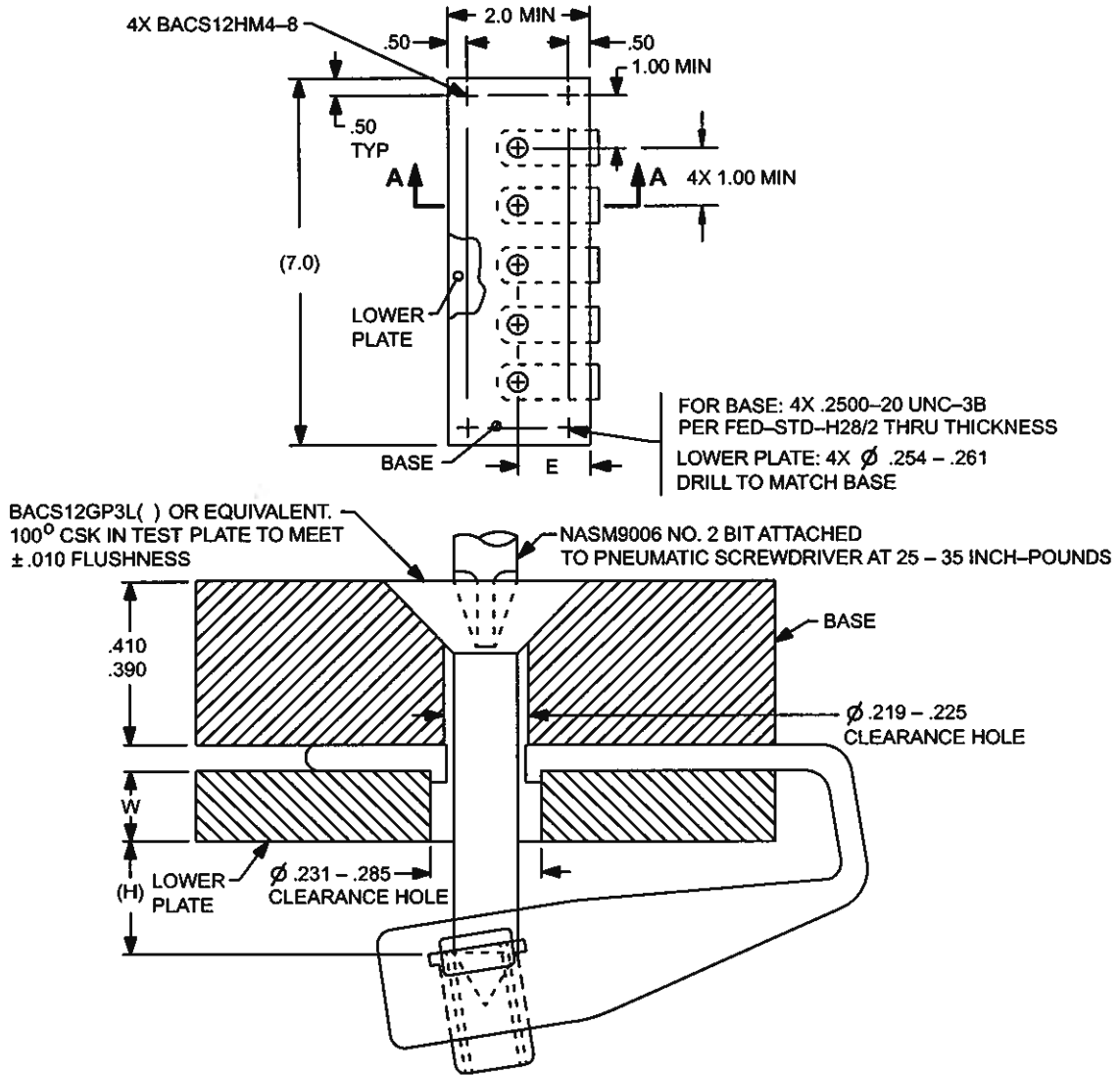
BOEING STANDARD NUMBER BACN11AL 4	T ±.005	X +.000 -.010	Y +.000 -.010	TORQUE OUT IN-LB MINIMUM	EDGE DISTANCE TO BE USED
1	.150	.650	.720	60	X
2					

**BACN11AL**  
SH 7

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 7

PROCUREMENT SPECIFICATION (CONTINUED)



SECTION A - A

TEST PLATE MATERIAL

BASE AND LOWER PLATE; DIE STEEL, 45 - 48 HRC.

TEST PLATE FINISH

OPTIONAL.

FIGURE 5 NUT ENGAGEMENT TEST FIXTURE (SEE TABLE III)

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**BACN11AL**  
SH 8

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 8

PROCUREMENT SPECIFICATION (CONTINUED)

TABLE III NUT ENGAGEMENT TEST

BOEING STANDARD NUMBER BACN11AL ④	H REF	W ±.005	E ±.005	BACS12GP3L( ) (OR EQUIVALENT) REQUIRED MINIMUM GRIP LENGTH NUMBER
1	.443	.155	.645	16
2	.428	.295		18

**MATERIAL**

- NUT ELEMENT - A286 CRES PER AMS 5525, AMS 5731, OR AMS 5734.
- CLIP - TORLON 4203L POLYAMIDE-IMIDE PLASTIC PER ASTM D 5204. (PAI000R03A56316E11FB41)

**FINISH**

- NUT ELEMENT - CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 2.
- PASSIVATE PER AMS 2700, TYPE 2 OR TYPE 8.
- CLIP - NONE

**LUBRICATION**

- NUT ELEMENT - APPLY AS5272, TYPE I SOLID FILM LUBRICANT. LUBRICANT SHALL MEET THE REQUIREMENTS OF BPS-N-70 AND HYDRAULIC FLUID RESISTANCE OF BMS3-8. (AS5272 SHALL BE IN ACCORDANCE WITH THE QPL IN AS5272SUP). LOCALIZED REMOVAL OF SOLID FILM COMMON TO TOP OF NUT ELEMENT DUE TO INSTALLATION INTO CLIP IS ACCEPTABLE.

**MARKING**

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. METHOD AND LOCATION OPTIONAL.

**BACN11AL** SH 9

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL** SH 9

**PACKAGING**

FOR USE ON PROCUREMENT CONTRACTS ONLY:

"C60" SUFFIX INDICATES NUTS TO BE SHIPPED IN ST10-1809A CARTRIDGE. (60 NUTS PER CARTRIDGE).

**NOTE:** "C60" SUFFIX USE ON DRAWINGS IS PROHIBITED.

ABSENCE OF "C60" INDICATES NUTS TO BE SHIPPED IN BULK FORM.

**PROCUREMENT**

MARKETING MASTERS INC (CAGE CODE 62063)

LISI AEROSPACE - MONADNOCK PRODUCTS (CAGE CODE 60119) "NO CODE" ONLY 

THE MANUFACTURERS LISTED IN BPS-N-70SUP AND THEIR AUTHORIZED DISTRIBUTORS ARE THE ONLY APPROVED SOURCES FOR THE ABOVE QUALIFIED PRODUCTS. SEE BPS-N-70SUP 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.

THIS IS A MANUFACTURER-DESIGNED PRODUCT. BOEING MAKES NO REPRESENTATION WHATEVER REGARDING PATENT OR ANY 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.

MARKETING MASTERS INC STATES THAT PATENT NO. 6474917 IS PERTINENT TO ITS PRODUCT.

LISI AEROSPACE STATES THAT PATENT NO. 6854941 IS PERTINENT TO ITS PRODUCT.

**BACN11AL**  
SH 10

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 10

**USAGE AND APPLICATION INFORMATION**

BACN11AL COMPOSITE CLIP-NUTS ARE INTENDED FOR USE INSIDE THE PRESSURIZED SECTION OF THE AIRCRAFT IN PLACE OF METAL CLIP-NUTS TO REDUCE THE POTENTIAL FOR CORROSION WITH ALUMINUM STRUCTURE.

THESE NUTS ARE FOR USE IN SECONDARY STRUCTURE APPLICATIONS SUCH AS SECURING FLOORING, INTERIOR TRIM, OR ANY APPLICATION WHERE SPACING OF THE PART DUE TO CLIP THICKNESS IS NOT OBJECTIONABLE. THESE NUTS CAN BE INSTALLED AT THE EDGE OF A PART OR THROUGH A RECTANGULAR CUTOUT.

THESE CLIP-NUTS SHALL NOT BE USED IN AREAS WHERE CONTAMINATION WITH BMS3-11 HYDRAULIC FLUID IS POSSIBLE.

INSTALLATION FASTENER GRIP LENGTHS SHOULD BE INCREASED APPROXIMATELY 2-3 GRIP LENGTHS OVER GRIP LENGTHS CALLED OUT FOR METAL CLIP-NUTS.

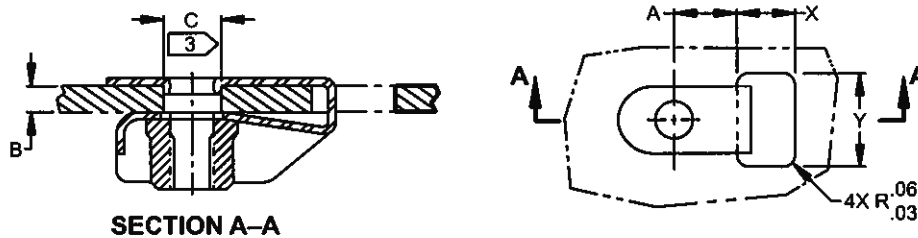
**CAUTION**

THESE CLIP-NUTS REQUIRE THE USE OF FULLY THREADED FASTENERS WITH THE CORRECT LENGTH TO AVOID ACCIDENTALLY OVEREXTENDING THE PLASTIC CLIP. TO OBTAIN CORRECT LENGTH, ADD .400 TO STACK THICKNESS, DIVIDE BY .0625, AND ROUND UP.

SEE BACN10YD, BACN11K OR BACN10VR FOR ALL METAL CLIP-NUTS (.1900-32) INTENDED FOR FLOOR PANEL APPLICATIONS. SEE TABLE IV.

**TABLE IV CLIP-NUT FAMILY REFERENCE**

BOEING STANDARD NUMBER	CLIP MATERIAL	NUT MATERIAL	SERVICE TEMP
BACN10YD	ALLOY STEEL	ALLOY STEEL	450F
BACN11K	ALLOY STEEL	CRES	450F
BACN10VR	TITANIUM	CRES	350F



**FIGURE 6 INSTALLATION DIMENSIONS (SEE TABLE V)**

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**BACN11AL**  
SH 11

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 11

TABLE V INSTALLATION DATA

BOEING STANDARD NUMBER BACN11AL ④	A RANGE OF EDGE MARGIN	B RANGE OF SHEET THICKNESS	Ø C ③	RECTANGULAR CUTOUT	
				X	Y
1	.37 - .70	.020 - .160	.231 - .314	.38 MIN	.62 MIN
2		.140 - .300		---	---

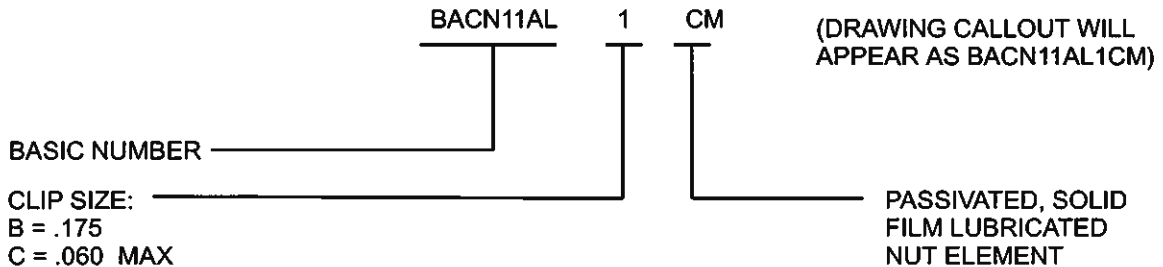
**CODING**

DASH NUMBER DESIGNATES CLIP-NUT SIZE PER TABLE I.

NO CODE FOLLOWING DASH NUMBER DESIGNATES A CADMIUM PLATED, SOLID FILM LUBRICATED NUT ELEMENT.

"CM" FOLLOWING DASH NUMBER DESIGNATES A PASSIVATED, SOLID FILM LUBRICATED NUT ELEMENT.

**EXAMPLE OF PART NUMBER**



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

**BACN11AL**  
SH 12

**NUT,  
CLIP-ON, SELF-LOCKING,  
CORROSION RESISTANT NUT,  
PLASTIC CLIP, 450F**

**BACN11AL**  
SH 12