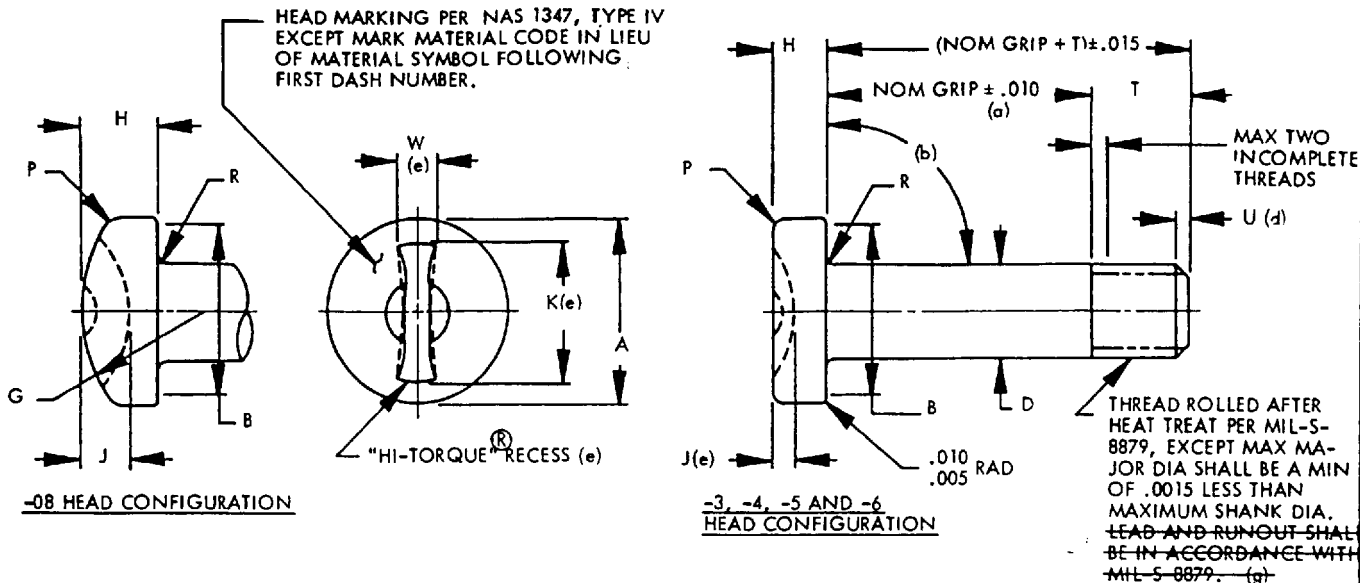


# NATIONAL AEROSPACE STANDARD

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 1725 DE SALES STREET, N. W. WASHINGTON, D. C. 20036

AIA AND ITS COMMITTEES WILL NOT INVESTIGATE THE APPLICABILITY OF PATENTS TO THE SUBJECT MATTER OF NAS STANDARDS AND IN RESPECT THEREOF DO NOT ASSUME ANY LIABILITY TO PATENT OWNERS OR TO PROSPECTIVE USERS.



| FIRST DASH NO. | THREAD           | A DIA     | B BRG DIA MIN | D DIA       | G RAD REF | H         | P RAD     | R RAD     | T REF | U REF (d) | Z TIR (c) | HI-TORQUE RECESS |           |           |           |
|----------------|------------------|-----------|---------------|-------------|-----------|-----------|-----------|-----------|-------|-----------|-----------|------------------|-----------|-----------|-----------|
|                |                  |           |               |             |           |           |           |           |       |           |           | RECESS NO.       | J (e)     | K REF (e) | W REF (e) |
| -08            | .1640-32 UNJC-3A | .322 .308 | .289          | .1635 .1610 | .440      | .115 .105 | .050 .040 | .020 .010 | .276  | .050      | .0040     | 2                | .061 .055 | .260      | .098      |
| -3             | .1900-32 UNJF-3A | .374 .360 | .331          | .1895 .1870 | -         | .125 .115 | .035 .025 | .020 .010 | .276  | .050      | .0040     | 3                | .045 .042 | .302      | .105      |
| -4             | .2500-28 UNJF-3A | .492 .477 | .424          | .2495 .2470 | -         | .150 .140 | .040 .025 | .020 .010 | .316  | .060      | .0030     | 4                | .054 .051 | .414      | .135      |
| -5             | .3125-24 UNJF-3A | .612 .597 | .518          | .3120 .3095 | -         | .188 .176 | .050 .035 | .025 .015 | .375  | .060      | .0030     | 5                | .064 .061 | .485      | .152      |
| -6             | .3750-24 UNJF-3A | .740 .722 | .611          | .3745 .3720 | -         | .220 .206 | .050 .025 | .025 .015 | .391  | .080      | .0025     | 6                | .088 .084 | .635      | .190      |

- (a) GRIP LENGTH IS FROM BEARING SURFACE OF BOLT HEAD TO END OF FULL CYLINDRICAL PORTION OF SHANK.
- (b) BEARING SURFACE OF HEAD SHALL BE PERPENDICULAR TO SHANK WITHIN .003 TIR.
- (c) SHANK SHALL BE STRAIGHT WITHIN "Z" VALUES TIR PER INCH OF LENGTH.
- (d) POINT SHALL BE FLAT AND CHAMFERED. CHAMFER PLUS INCOMPLETE THREAD SHALL NOT EXCEED "U".
- (e) HI-TORQUE RECESS PER MS33750. BOLT RECESS SHALL BE TORQUE TESTED WITH APPLICABLE MS33750 DRIVER WITH AXIAL END PRESSURE NOT EXCEEDING 15 POUNDS. BOLTS ARE REJECTABLE IF MINIMUM TORQUE VALUES LISTED ABOVE CAUSE FRACTURE OF BOLT OR DISTORTION WHICH RESULTS IN RAISE OF METAL AT EDGE OF SLOT EXCEEDING .005 ABOVE SURROUNDING AREA. SAMPLING SHALL BE PER MIL-STD-105, 4% AQL LEVEL S-1.
- (f) BOLTS WITHOUT PILOT DEPRESSION IN RECESS MAY BE SUPPLIED UNTIL 30 SEPT. 1971.
- (g) FASTENER SUPPLIERS MAY SUPPLY FASTENERS WITH MIL-S-7742 THREADS UNTIL 30 SEPT. 1971. FASTENERS WITH MIL-S-7742 THREADS MAY BE USED UNTIL STOCK IS DEPLETED.
- (h) "C" CODE MATERIAL INACTIVE AFTER 30 SEPT. 1971. USE "E" CODE ("E" MAY BE SUPPLIED IN LIEU OF "C").
- (i) FOR DESCRIPTION OF STATUS NOTES, SEE NAS 380.
- ⑦ (j) PARTS MANUFACTURED TO NAS621 PROCUREMENT SPECIFICATION PRIOR TO JANUARY 1, 2001 MAY BE SUPPLIED TO DEPLETION.

## ⑦ LIST OF CURRENT SHEETS

| SHEET | REVISION |
|-------|----------|
| 1     | 7        |
| 2     | 7        |
| 3     | 5        |

INACTIVE FOR DESIGN AFTER DECEMBER 31, 1976. SEE NAS1218 AND NAS1578.  
FOR DESCRIPTION OF STATUS NOTES SEE NAS380

CUSTODIAN: NATIONAL AEROSPACE STANDARDS COMMITTEE

PROCUREMENT SPECIFICATION  
NOTED

TITLE  
BOLT, PAN HEAD  
HI-TORQUE RECESS, SHORT THREAD

CLASSIFICATION  
STANDARD PART

NAS 1217

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APPROVAL DATE SEPT. 1958 REVISION ④ 30 SEPT. 1970 ⑤ 30 SEPT. 1971 ⑥ 30 MARCH 1977 ⑦ 8 JAN. 2001

# NATIONAL AEROSPACE STANDARD

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 1725 DE SALES STREET, N. W. WASHINGTON, D. C. 20036

| FIRST<br>DASH<br>NO. | RECESS TORQUE<br>IN LBS. MIN          |                    | DOUBLE SHEAR STRENGTH<br>LBS. MIN     |                    | TENSILE STRENGTH<br>LBS MIN           |                    |
|----------------------|---------------------------------------|--------------------|---------------------------------------|--------------------|---------------------------------------|--------------------|
|                      | A-286 CRES<br>ALLOY STEEL<br>TITANIUM | 302 OR<br>305 CRES | A-286 CRES<br>ALLOY STEEL<br>TITANIUM | 302 OR<br>305 CRES | A-286 CRES<br>ALLOY STEEL<br>TITANIUM | 302 OR<br>305 CRES |
| -08                  | 42                                    | 34                 | 4,010                                 | 2,830              | 1,700                                 | 1,330              |
| -3                   | 58                                    | 50                 | 5,380                                 | 3,800              | 2,480                                 | 1,930              |
| -4                   | 125                                   | 110                | 9,300                                 | 6,570              | 4,500                                 | 3,510              |
| -5                   | 250                                   | 180                | 14,600                                | 10,270             | 7,200                                 | 5,620              |
| -6                   | 430                                   | 330                | 21,000                                | 14,800             | 10,900                                | 8,500              |

## MATERIAL:

ALLOY STEEL PER PROCUREMENT SPEC.  
A-286 CRES AMS5731, AMS 5735 OR AMS 5737.  
302 CRES, CONDITION B OR 305 CRES PER QQ-S-763.  
6Al-4V TITANIUM PER PROCUREMENT SPEC.

## HEAT TREAT:

ALLOY STEEL 160,000-180,000 PSI TENSILE STRENGTH PER MIL-H-6875.  
A-286 CRES: 160,000 PSI MINIMUM TENSILE STRENGTH.  
302 OR 305 CRES: 125,000 PSI MINIMUM TENSILE STRENGTH.  
6Al-4V TITANIUM: 160,000 PSI MINIMUM TENSILE STRENGTH PER PROCUREMENT SPEC.

## FINISH:

ALLOY STEEL: 3 CADMIUM PLATE PER QQ-P-416, TYPE I, CLASS 3, TYPE II, CLASS 2, OR TYPE II, CLASS 2 WITH BLACK FINISH PER UNICHROME DIP BULLETIN 65-8-CJ (SEE "CODE").  
A-286 CRES: PASSIVATE PER QQ-P-35; OR CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2 (SEE "CODE").  
302 OR 305 CRES: PASSIVATE PER QQ-P-35.  
6Al-4V TITANIUM: NO FINISH.

## CODE:

SECOND DIGIT OF FIRST DASH NUMBER FOR -08 SIZE INDICATES THREAD NUMBER SIZE. FOR SIZES ABOVE -08 FIRST DASH NUMBER INDICATES NOMINAL DIAMETER IN 16THS. SECOND DASH NUMBER INDICATES GRIP LENGTH IN .0625 INCH INCREMENTS. (CONVERTED TO THREE DECIMAL PLACES PER ANSI Y14.5) INTERMEDIATE AND LONGER GRIP LENGTHS THAN THOSE LISTED ON PAGE 3 MAY BE ORDERED BY USE OF SIGNIFICANT DASH NUMBERS.

MATERIAL: NO CODE LETTER FOLLOWING FIRST DASH NUMBER INDICATES ALLOY STEEL.  
CODE LETTERS "CR" FOLLOWING FIRST DASH NUMBER INDICATES 302 OR 305 CRES.  
CODE LETTER "E" FOLLOWING FIRST DASH NUMBER INDICATES 160 KSI A-286 CRES.  
CODE LETTER "V" FOLLOWING FIRST DASH NUMBER INDICATES 6Al-4V TITANIUM.  
FINISH: A-286 CRES: NO CODE LETTER FOLLOWING SECOND DASH NUMBER INDICATES PASSIVATE PER QQ-P-35.  
CODE LETTER "P" FOLLOWING SECOND DASH NUMBER INDICATES TYPE II, CLASS 2 CADMIUM PLATE.

## EXAMPLE OF PART NUMBER:

NAS1217-4-5 = .2500-28 ALLOY STEEL BOLT, .312 GRIP LENGTH, AND TYPE II, CLASS 2 CADMIUM PLATE  
NAS1217-4ESP = .2500-28 A-286 CRES BOLT, .312 GRIP LENGTH, AND TYPE II, CLASS 2 CADMIUM PLATE.  
NAS1217-4CR5 = .2500-28 302 OR 305 CRES BOLT, .312 GRIP LENGTH, PASSIVATED.  
NAS1217-4V5 = .2500-28 TITANIUM BOLT, .312 GRIP LENGTH, NO FINISH.

## NOTES:

1. CONCENTRICITY: "A" DIA TO "D" DIA WITHIN .008 TIR.  
"D" DIA TO THREAD PITCH DIA WITHIN .0045 TIR FOR NAS1217-3, THRU NAS1217-5, AND WITHIN .006 TIR FOR NAS1217-6 AND LARGER.
2. SURFACE TEXTURE PER ANSI B46.1. BEARING SURFACE OF HEAD, HEAD TO SHANK FILLET RADIUS, SHANK AND ALL THREAD ELEMENTS 32 RHR MAX. ALL OTHER SURFACES 125 RHR MAX.
- 3 3. ALLOY STEEL PARTS WITH TYPE II, CLASS 3 CADMIUM PLATE MAY BE FURNISHED FROM STOCK UNTIL 1 JULY 1978.
4. BREAK ALL SHARP EDGES AND REMOVE ALL BURRS.
5. DIMENSIONS IN INCHES AND TO BE MET AFTER PLATING (WHEN REQUIRED).

## PROCUREMENT SPEC:

ALLOY STEEL: NAS 498 EXCEPT AS NOTED.  
A-286: AMS7479. STRESS RUPTURE NOT APPLICABLE.  
302 OR 305 CRES: AMS7472. STRESS RELIEF AFTER THREAD ROLLING NOT MANDATORY.  
6Al-4V TITANIUM: ~~NAS621~~ NAS4004

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INACTIVE FOR DESIGN AFTER DECEMBER 31, 1976. SEE  
NAS1218 AND NAS1578.

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