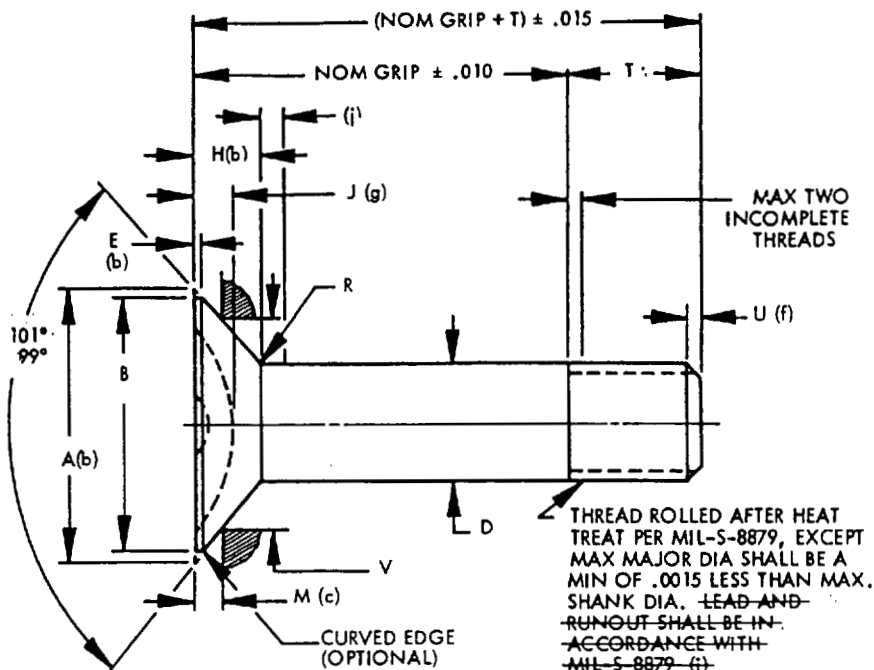
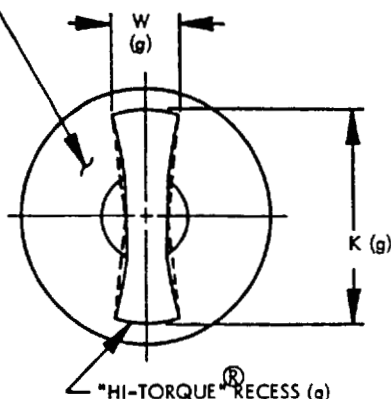


HEAD MARKING PER NAS 1347, TYPE IV EXCEPT MARK MATERIAL CODE IN LIEU OF MATERIAL SYMBOL FOLLOWING FIRST DASH NUMBER



FIRST DASH NO.	THREAD	A DIA MAX (b)	B DIA MIN	D DIA	E MAX (b)	H REF (b)	M GAGE PROT (c)	R RAD	T	U REF (f)	V GAGE DIA (d)	Y TIR (e)	Z	"HI-TORQUE" RECESS (g)			
														RECESS NO.	J	K REF	W REF
-08	.1640-32 UNJC-3A	.332	.294	.1635 .1610	.015	.072	.0278 .0195	.015 .005	.276	.050	.2671 .2669	.005	.0040	2	.053 .050	.265	.100
-3	.1900-32 UNJF-3A	.385	.344	.1895 .1870	.016	.083	.0302 .0232	.015 .005	.276	.050	.3147 .3145	.005	.0040	3	.045 .042	.305	.110
-4	.2500-28 UNJF-3A	.507	.461	.2495 .2470	.018	.110	.0343 .0273	.015 .005	.316	.060	.4245 .4243	.006	.0030	4	.054 .051	.422	.134
-5	.3125-24 UNJF-3A	.635	.583	.3120 .3095	.020	.139	.0412 .0322	.020 .010	.375	.060	.5389 .5387	.008	.0030	5	.064 .061	.490	.160
-6	.3750-24 UNJF-3A	.762	.703	.3745 .3720	.023	.166	.0466 .0366	.020 .010	.391	.080	.6532 .6530	.009	.0025	6	.088 .084	.639	.198

- (a) GRIP LENGTH IS FROM TOP OF BOLT HEAD TO END OF FULL CYLINDRICAL PORTION OF SHANK.
- (b) A, E, AND H ARE INCLUDED FOR ENGINEERING REFERENCE PURPOSES ONLY AND ARE NOT TO BE USED FOR INSPECTION. VALUES A, E, AND H ARE CALCULATED LIMITS RESULTING FROM TOLERANCE ON B, D, M, V, AND HEAD ANGLE.
- (c) DIMENSIONS FOR M GAGE PROTRUSION SHALL BE INSPECTED PER NAS 527.
- (d) HEAD EDGE OUT OF ROUNDNESS SHALL NOT EXCEED "Y" TIR.
- (e) SHANK SHALL BE STRAIGHT WITHIN "Z" VALUES TIR PER INCH OF LENGTH.
- (f) POINT SHALL BE FLAT AND CHAMFERED. CHAMFER PLUS INCOMPLETE THREAD SHALL NOT EXCEED "U".
- (g) **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.
- (h) BOLTS WITHOUT PILOT DEPRESSION IN RECESS MAY BE SUPPLIED UNTIL 30 SEPT. 1971.
- (i) 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.
- (j) AN INCREASE OF .001 OVER "D" DIA IS PERMISSIBLE FROM POINT OF TANGENCY OF "R" RAD AND SHANK FOR A DISTANCE OF .0312.
- (k) "C" CODE MATERIAL INACTIVE AFTER 30 SEPT. 1971. USE "E" CODE ("E" MAY BE SUPPLIED IN LIEU OF "C").
- (l) INACTIVE FOR DESIGN AFTER DECEMBER 31, 1976. SEE NAS1221.
- (m) PARTS MANUFACTURED TO NAS621 PROCUREMENT SPECIFICATION PRIOR TO JANUARY 1, 2001 MAY BE SUPPLIED TO DEPLETION.

LIST OF CURRENT SHEETS

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CUSTODIAN: NATIONAL AEROSPACE STANDARDS COMMITTEE

PROCUREMENT SPECIFICATION
NOTED

TITLE
BOLT, 100° FLUSH HEAD
"HI-TORQUE" RECESS, SHORT THREAD

CLASSIFICATION
STANDARD PART

NAS 1220

Documents

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7 8 Jan. 2001
REVISION (4) 30 Sept. 1970 (5) 30 Sept. 1971 (6) 30 March 1977
APPROVAL DATE SEPT. 1958

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST DATE OF APPROVAL SHOWN HEREON.

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	RECESS TORQUE IN. LBS. MIN		DOUBLE SHEAR STRENGTH LBS. MIN		TENSILE STRENGTH LBS. MIN	
	A-286 CRES ALLOY STEEL TITANIUM	302 OR 305 CRES	A-286 CRES ALLOY STEEL TITANIUM	302 OR 305 CRES	A-286 CRES ALLOY STEEL TITANIUM	302 OR 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	3,570
-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 PER AMS 5731, AMS 5735 OR AMS 5737.
302 CRES, CONDITION B OR 305 CRES PER QQ-S-763.
6AI-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.
6AI-4V TI: 160,000 PSI MINIMUM TENSILE STRENGTH PER PROCUREMENT SPEC.

FINISH:

ALLOY STEEL: Δ 3 CADMIUM PLATE PER QQ-P-416, TYPE I, CLASS 3; TYPE II, CLASS 2; TYPE II, CLASS 3; OR TYPE II, CLASS 2 WITH BLACK FINISH PER UNICHROME DIP BULLETIN 65-B-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.
6AI-4V TI: 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 LETTER "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 6AI-4V TITANIUM.
FINISH: 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:

NAS1220-4-5 = .2500-28 ALLOY STEEL BOLT, .312 GRIP LENGTH, AND TYPE II, CLASS 2 CADMIUM PLATE
NAS1220-4E5P = .2500-28 A-286 CRES BOLT, .312 GRIP LENGTH, AND TYPE II, CLASS 2 CADMIUM PLATE
NAS1220-4CR5 = .2500-28 302 OR 305 CRES BOLT, .312 GRIP LENGTH, PASSIVATED.
NAS1220-4V5 = .2500-28 TITANIUM BOLT, .312 GRIP LENGTH, NO FINISH.

NOTES:

1. CONCENTRICITY: CONICAL SURFACE OF HEAD TO "D" DIA WITHIN .003 TIR.
"D" DIA TO THREAD PITCH DIA WITHIN .0045 TIR FOR NAS 1220-3 THRU NAS 1220-5 AND WITHIN .006 TIR FOR NAS 1220-6 AND LARGER.
2. SURFACE TEXTURE PER ANSI B46.1. CONICAL SURFACE OF HEAD, HEAD TO SHANK FILLET RADIUS, SHANK AND ALL THREAD ELEMENTS 32RHR MAX. ALL OTHER SURFACES 125 RHR MAX.
- Δ 3 ALLOY STEEL PARTS WITH TYPE II, CLASS 3 AND TYPE I, CLASS 3 MAY BE FURNISHED FROM SUPPLIER'S 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 CRES: AMS 7479. STRESS RUPTURE NOT APPLICABLE.
302 OR 305 CRES: AMS 7472 STRESS RELIEF AFTER THREAD ROLLING NOT MANDATORY.
6AI-4V TITANIUM: ~~NAS 627~~; NAS4004

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INACTIVE FOR DESIGN AFTER DECEMBER 31, 1976. SEE
NAS1221

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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

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