

FIRST DASH NO.	THREAD UNJF-3A	A DIA MAX (b)	B DIA MIN	D DIA		E MAX (b)	H REF (b)	M GAGE PROT (c)	R RAD	T REF	U REF (f)	V GAGE DIA	Y TIR (d)	Z TIR (e)	TENSILE STRENGTH LBS. MIN.
				PLATED	UN-PLATED										
-3	.1900-32	.3047	.2578	.1895 .1885	.1895 .1890	.015	.049	.0250 .0210	.020 .010	.363	.050	.2441 .2439	.005	.0040	1,600
-4	.2500-28	.3988	.3504	.2495 .2485	.2495 .2490	.015	.063	.0278 .0232	.020 .010	.403	.050	.3315 .3313	.006	.0030	3,200
-5	.3125-24	.4787	.4289	.3120 .3110	.3120 .3115	.015	.070	.0305 .0255	.025 .010	.501	.060	.4047 .4045	.007	.0030	4,230
-6	.3750-24	.5662	.5149	.3745 .3735	.3745 .3740	.015	.081	.0333 .0277	.030 .015	.594	.060	.4854 .4852	.008	.0025	6,160
-7	.4375-20	.6741	.6047	.4370 .4360	.4370 .4365	.022	.100	.0430 .0370	.030 .015	.675	.080	.5697 .5695	.009	.0025	8,320
-8	.5000-20	.7611	.6901	.4995 .4985	.4995 .4990	.022	.111	.0458 .0392	.030 .015	.768	.080	.6499 .6497	.010	.0020	11,300
-9	.5625-18	.8449	.7655	.5615 .5605	.5615 .5610	.025	.119	.0515 .0445	.030 .015	.881	.090	.7200 .7198	.010	.0020	14,300
-10	.6250-18	.9329	.8518	.6240 .6230	.6240 .6235	.025	.130	.0543 .0467	.030 .015	.981	.090	.8011 .8009	.010	.0020	18,000

(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".

INFORMATION ON THIS DOCUMENT IS A TRADE SECRET, PROPRIETARY, AND SHALL NOT BE USED OR REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN AUTHORIZATION OF SPS TECHNOLOGIES.

TOLERANCES ± .010 AND ±2°

SURFACE ROUGHNESS 125/

UNLESS OTHERWISE NOTED

DRAWN: STEVE FOSTER DATE: 4/13/94

APPROVED: L. KLINE DATE: 7/22/97

APPROVED: R. HUKARI

SPS
TECHNOLOGIES

FSCM NO. 56878

CUSTODIAN:
JENKINTOWN, PA.

STANDARDS AND SPECIFICATIONS

AS NOTED

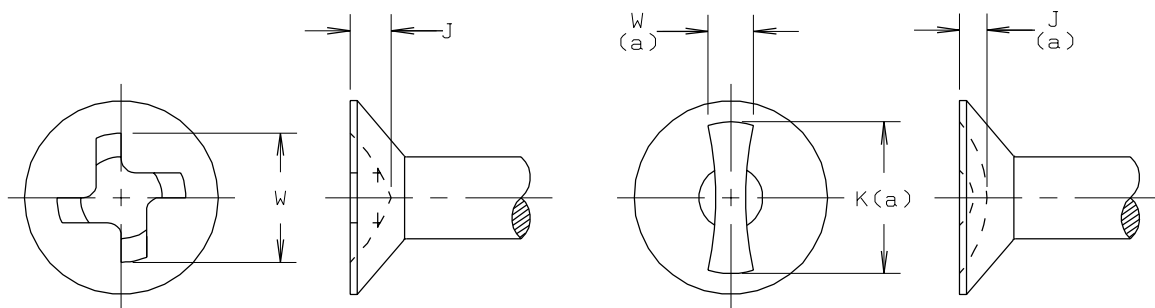
TITLE

BOLT, 100° FLUSH REDUCED HEAD, 160 KSI

PART NUMBER: 125138-()-()

SHEET 1 OF 3

PROJECT 59A60



FIRST DASH NO.	RECESS NO.	J MAX.	W DIA. MAX.	GAGE PENETRATION		RECESS TORQUE IN. LBS.	RAISED METAL LIMIT INCH	FIRST DASH NO.	RECESS NO.	J		K REF.	W REF.
				MIN.	MAX.					MIN.	MAX.		
-3	8	.078	.215	.0480	.0595	33	.005	-3	2	.036	.039	.224	.100
-4	10	.090	.248	.0560	.0685	60	.005	-4	3	.042	.045	.300	.110
-5	1/4	.118	.325	.0750	.0890	120	.005	-5	4	.046	.049	.394	.134
-6	5/16	.122	.357	.0700	.0860	240	.006	-6	5	.061	.064	.484	.160
-7	3/8	.145	.427	.0850	.1030	340	.007	-7	6	.066	.070	.571	.198
-8	7/16	.169	.498	.1005	.1205	560	.008	-8	7	.082	.086	.660	.224
-9	1/2	.193	.568	.1155	.1375	800	.009	-9	8	.094	.098	.731	.256
-10	9/16	.217	.638	.1305	.1545	1000	.010	-10	9	.100	.104	.819	.300

MATERIAL:

ALLOY STEEL PER AMS6322, OR MIL-S-6049,
A286 CRES. PER AMS5853,
6AL-4V TITANIUM PER AMS4967.

HEAT TREATMENT:

ALLOY STEEL AND A286 CRES. 160,000 PSI MINIMUM TENSILE STRENGTH.
ULTIMATE TENSILE STRENGTH PER MIL-H-6875.
TITANIUM 160,000 PSI MINIMUM TENSILE STRENGTH PER MIL-H-81200.
TENSILE STRENGTH PER MIL-H-81200.

FINISH:

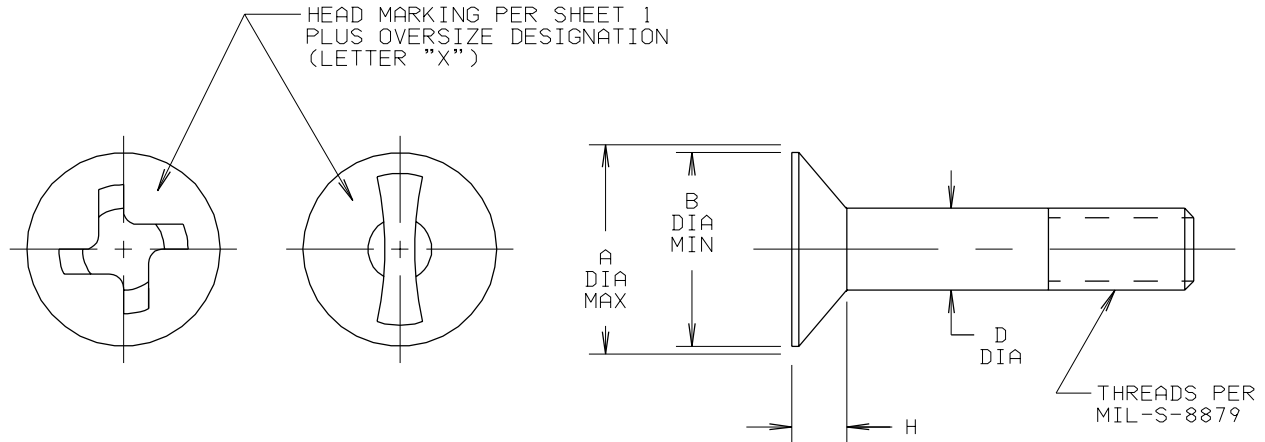
ALLOY STEEL - CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.
A286 CRES. - PASSIVATE PER ASTM A967.

NOTES:

- 1). FIRST DASH NO. INDICATES NOMINAL DIAMETER IN 16TH INCH INCREMENTS.
SECOND DASH NO. INDICATES GRIP LENGTH IN 16TH INCH INCREMENTS.
- 2). CODE LETTER "A" FOLLOWING BASIC PART NO. INDICATES ALLOY STEEL.
CODE LETTER "C" FOLLOWING BASIC PART NO. INDICATES CORROSION RESISTANT MATERIAL.
CODE LETTER "V" FOLLOWING BASIC PART NO. INDICATES TITANIUM MATERIAL.
CODE LETTER "X" FOLLOWING SECOND DASH NO. INDICATES OVERSIZE BOLT.
CODE LETTER "H" FOLLOWING FIRST DASH NO. INDICATES HI-TORQUE® RECESS PER MS33750.
CODE LETTER "R" FOLLOWING FIRST DASH NO. INDICATES TORQ-SET® RECESS PER MS14191.
CODE LETTER "T" FOLLOWING FIRST DASH NO. INDICATES TORQ-SET® RECESS PER MS33781.
- 3). RUNOUT: CONICAL SURFACE OF HEAD TO "D" DIA. WITHIN .003 TIR. "D" DIA. TO
THREAD PITCH WITHIN .0045 FOR DASH 3 THRU DASH 8, AND WITHIN .006 TIR. FOR DASH
6 AND ABOVE.
- 4). BOLT RECESS SHALL BE TORQUE TESTED IN BOTH INSTALLATION AND REMOVAL DIRECTION WITH APPLICABLE
DRIVER. AXIAL END PRESSURE SHALL NOT EXCEED 15 POUNDS IN THE TIGHTENING DIRECTION BUT MAY BE
INCREASED TO 45 POUNDS IN THE REMOVAL DIRECTION. BOLTS ARE REJECTABLE IF MINIMUM TORQUE VALUES
LISTED IN TABLE ABOVE CAUSE FRACTURE OF BOLT RECESS OR DISTORTION WHICH RESULTS IN RAISED METAL
AT EDGE OF RECESS EXCEEDING LIMITS LISTED IN TABLE ABOVE. SAMPLINGS SHALL BE PER ANSI/ASQC Z1.4
LEVEL 5-1, AQL 4%.
- 5). SURFACE TEXTURE: SEE PROCUREMENT SPECIFICATION.
- 6). BREAK ALL SHARP EDGES AND REMOVE ALL BURRS.
- 7). DIMENSIONS IN INCHES AND TO BE MET AFTER PLATING (WHEN REQUIRED).

PROCUREMENT

SPECIFICATION: MIL-B-87114 EXCEPT AS NOTED. TENSILE STRENGTH AND RECESS TORQUE VALUES AS TABULATED
HEREIN. TENSILE FATIGUE LIFE TESTS APPLY TO TITANIUM ONLY. FATIGUE TESTING SHALL BE
PER NAS621 EXCEPT FATIGUE TEST LOAD SHALL BE 33.3% OF TABULATED TENSILE LOAD AND
R = .25. COLD WORKING OF HEAD TO SHANK FILLET IS NOT REQUIRED ON ALLOY OR CRES BOLTS.



.0156 OVERSIZE

FIRST DASH NO.	D DIA.		H REF (b)
	UNPLATED	PLATED	
-3	.2051 .2046	.2051 .2041	.043
-4	.2651 .2646	.2651 .2641	.057
-5	.3276 .3271	.3276 .3266	.065
-6	.3901 .3896	.3901 .3891	.075
-7	.4526 .4521	.4526 .4516	.095
-8	.5151 .5146	.5151 .5141	.103
-9	.5771 .5766	.5771 .5761	.113
-10	.6396 .6391	.6396 .6386	.123

1. FOR MATERIAL, FINISH, PROCUREMENT INFORMATION AND DIMENSIONS NOT SHOWN, SEE SHEETS 1 AND 2.
2. MINIMUM TENSILE LOADS FOR "X" CODED PARTS ARE 85 PERCENT OF STANDARD LOADS TABULATED ON SHEET 1.
3. FOR .0312 OVERSIZE, USE NAS1580-() () Y.