



DASH NO DIA	(b) THREAD S	D DIA		A DIA			F MAX	(d) H	M REF	R RAD		(f) TENSILE STRENGTH LBS MIN	DOUBLE SHEAR STRENGTH LBS MIN	DRIVER SIZE
		MAX	MIN	MAX SHARP	MIN SHARP	ABSOLUTE MIN WITH MAX F				MAX	MIN			
04	4-40UNC-3A	1120	0925	225	207	200	0.10	0.44	250			760	1,480	1
06	6-32UNC-3A	1380	1141	279	257	249	0.14	0.55	312			1,120	2,240	
08	8-32UNC-3A	1640	1610	332	319	283	0.15	0.68	437	0.15	0.05	1,740	3,170	2
3	10-32UNF-3A	1890	1860	385	371	327	0.16	0.80	469			2,420	4,250	
4	1/4-28UNF-3A	2490	2450	507	492	447	0.18	1.06	506			4,420	7,360	3
5	5/16-24UNF-3A	3115	3085	635	627	569	0.20	1.33	531			7,100	11,500	
6	3/8-24UNF-3A	3740	3710	762	742	686	0.23	1.59	641			10,790	16,560	4
7	7/16-20UNF-3A	4365	4325	890	868	805	0.26	1.86	556	0.20	0.10	14,600	22,500	
8	1/2-20UNF-3A	4990	4950	1,017	992	919	0.30	2.13	781			19,810	29,400	
9	9/16-18UNF-3A	5615	5575	1,145	1,118	1,036	0.34	2.40	906			25,060	37,400	

- (a) Location of effective locking area X shall be in accordance with MS15981
- (b) Threads shall be formed by any single rolling process and in accordance with Specification MIL-S-7742
- (c) Dimensioning and gaging of recess design shall be in accordance with MS9006
- (d) Reference dimensions are for design purposes only and are not an inspection or manufacturing requirement
- (e) Chamfer 45° ± 5° (See MIL-STD-8 for clarification of angular tolerance) Chamfer to extend to root of thread
- (f) Based on 125,000 PSI ultimate tensile strength, and stress area = 3.1416 (E/2 - 3H/16)<sup>2</sup> See Handbook H-28 (1957) Part 1

**MATERIAL** Alloy Steel - See Procurement Specification  
**HARDNESS** Rockwell C26-C32  
**PLATING** Cadmium Plate, QQ-P-416, Type II, Class 3  
**SURFACE ROUGHNESS** The surface of the shank, fillet and bearing area shall not exceed .25 micro-inches See MIL-STD-10  
**LOCKING ELEMENT** In accordance with Specification MIL-F-18240 Locking element area, with locking element incorporated must pass thru a ring gage equal to maximum major thread diameter + .003 freely or with finger pressure  
**DESIGN AND USAGE LIMITATIONS** See MS15981

EXAMPLE OF PART NUMBER ME21091-4008 = 1/4-28 colt, 500 grip

**DIMENSIONS** In inches

FOR DESIGN FEATURES PURPOSES THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BID

Review activities  
Navy - WP  
USAF - 11

This standard has been approved by the BuWep (Department of the Navy) and the Department of the USAF and is mandatory for use by their activity. All other military activities are required to employ this standard where suitable

APPROVED 2 Nov 65  
REVISED

<b>P A</b> Navy - WP <b>Other Cust</b> USAF - 11	<b>TITLE</b> BOLT, SELF-LOCKING, 250° F, STEEL, 75 KSI Fuu, 125 KSI Ftu, 100° PLUS 4 HEAD, CROSS RECESSED	<b>MILITARY STANDARD</b>	
		<b>MS21091(ASG)</b>	
<b>PROCUREMENT SPECIFICATION</b> MIL-S-7839 & MIL-F-18240	<b>SUPERSEDES</b>	<b>SHEET</b> 1	<b>OF</b> 2

LENGTH DASH NO. (a)	ORIP G ± .010	LENGTH +.031 -.015									
		4-40	6-32	8-32	10-32	1/4-28	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18
002	.125	.375	.437	.562							
003	.187	.437	.500	.625	.593						
004	.250	.500	.562	.687	.656	.719					
006	.375	.625	.687	.812	.781	.844	.906	1.016			
008	.500	.750	.812	.937	.906	.969	1.031	1.141	1.156	1.281	
010	.625	.875	.937	1.062	1.031	1.094	1.156	1.266	1.281	1.406	1.531
012	.750	1.000	1.062	1.187	1.156	1.219	1.281	1.391	1.406	1.531	1.656
014	.875	1.125	1.187	1.312	1.281	1.344	1.406	1.516	1.531	1.656	1.781
016	1.000	1.250	1.312	1.437	1.406	1.469	1.531	1.641	1.656	1.781	1.906
018	1.125	1.375	1.437	1.562	1.531	1.594	1.656	1.766	1.781	1.906	2.031
020	1.250	1.500	1.562	1.687	1.656	1.719	1.781	1.891	1.906	2.031	2.156
022	1.375	1.625	1.687	1.812	1.781	1.844	1.906	2.016	2.031	2.156	2.281
024	1.500	1.750	1.812	1.937	1.906	1.969	2.031	2.141	2.156	2.281	2.406
026	1.625	1.875	1.937	2.062	2.031	2.094	2.156	2.266	2.281	2.406	2.531
028	1.750	2.000	2.062	2.187	2.156	2.219	2.281	2.391	2.406	2.531	2.656
030	1.875		2.187	2.312	2.281	2.344	2.406	2.516	2.531	2.656	2.781
032	2.000		2.312	2.437	2.406	2.469	2.531	2.641	2.656	2.781	2.906
034	2.125		2.437	2.562	2.531	2.594	2.656	2.766	2.781	2.906	3.031
036	2.250		2.562	2.687	2.656	2.719	2.781	2.891	2.906	3.031	3.156
038	2.375		2.687	2.812	2.781	2.844	2.906	3.016	3.031	3.156	3.281
040	2.500		2.812	2.937	2.906	2.969	3.031	3.141	3.156	3.281	3.406
042	2.625				3.031	3.094	3.156	3.266	3.281	3.406	3.531
044	2.750				3.156	3.219	3.281	3.391	3.406	3.531	3.656
046	2.875				3.281	3.344	3.406	3.516	3.531	3.656	3.781
048	3.000				3.406	3.469	3.531	3.641	3.656	3.781	3.906
050	3.125				3.531	3.594	3.656	3.766	3.781	3.906	4.031
052	3.250									4.031	4.156
054	3.375									4.156	4.281
056	3.500									4.281	4.406
058	3.625									4.406	4.531
060	3.750									4.531	4.656
062	3.875									4.656	4.781
064	4.000									4.781	4.906
066	4.125									4.906	5.031

(a) Unassigned dash numbers shall not be used except those dash numbers included by the following coding note:  
 Dash numbers indicate preferred grip lengths in .125 increments for lengths longer than 250 inches. Intermediate grip lengths between those lengths listed may be specified in .062 increments by intermediate dash numbers. Length and grip of a bolt with an odd number for the dash number will be .062 greater than shown for the bolt with the preceding even dash number.

APPROVED 2 NOV 65 REVISED

P.A. Navy - WP Other Cust USAF - 11	TITLE BOLT, SELF-LOCKING, 250° F, STEEL 75 KSI Fsu, 125 KSI FtU, 100° FLUSH HEAD, CROSS RECESSED	MILITARY STANDARD <b>MS21091(ASG)</b>
PROCUREMENT SPECIFICATION MIL-S-7839 & MIL-F-18240	SUPERSEDES	SHEET 2 OF