

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDS SPECIFIED IN THE SOLUTION: MIL-B-7039 AND MIL-P-18240

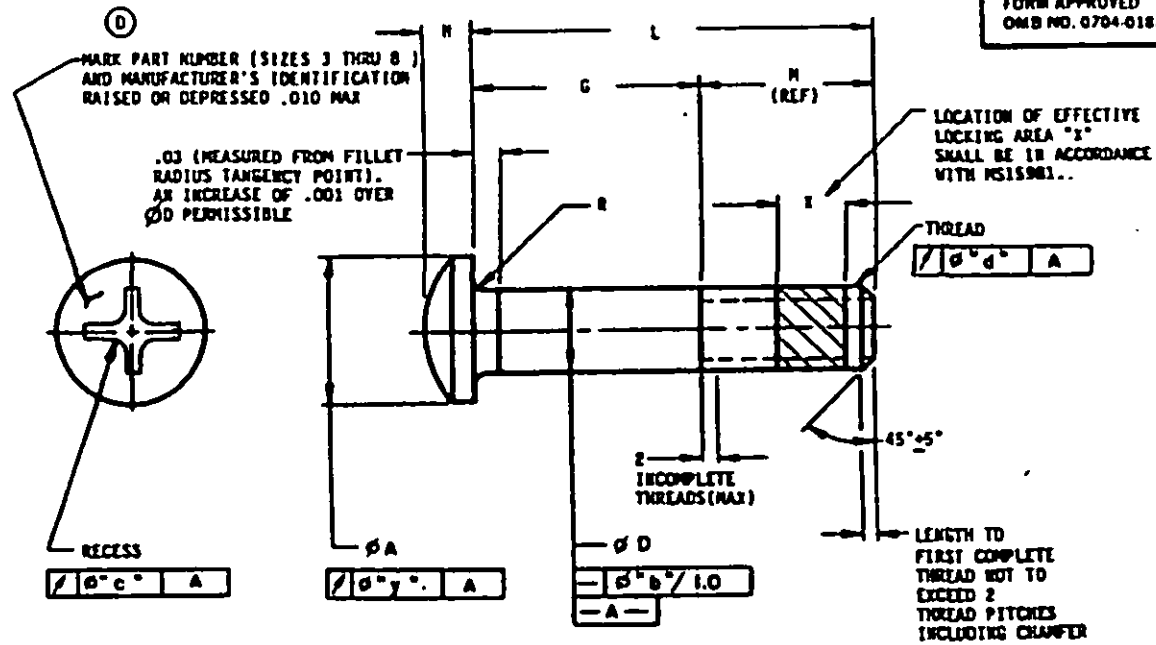


TABLE 1. DIMENSIONS AND MECHANICAL PROPERTIES.

Ø DASH NO	THREAD	Ø D MAX MIN	Ø A MAX MIN	H MAX MIN	M MIN REF	R MAX MIN	"y" MAX MIN	"d" MAX MIN	"c" MAX MIN	"b" MAX MIN	ULTIMATE TENSILE LBS MIN	DOUBLE SHEAR LBS MIN
04	.112-40UNC-3A	.1120 .1095	.219 .205	.080 .070	.250	.010 .015					480	930
06	.138-32UNC-3A	.1380 .1355	.270 .256	.097 .087	.312		.005			.0040	720	1,420
08	.164-32UNC-3A	.1635 .1610	.322 .306	.115 .105	.437			.0045	.016		1,120	2,030
3	.190-32UNF-3A	.1895 .1870	.373 .357	.133 .122	.469	.020 .010					1,600	2,720
4	.250-28UNF-3A	.2495 .2470	.492 .473	.178 .162	.506		.006			.0030	2,910	4,700
5	.3125-24UNF-3A	.3120 .3095	.615 .594	.218 .203	.531		.008				4,640	7,370
6	.375-24UNF-3A	.3745 .3720	.740 .716	.261 .244	.641	.025 .015	.009			.0025	7,020	10,600
7	.4375-20UNF-3A	.4370 .4345	.863 .838	.304 .286	.684			.0060	.024		9,490	14,400
8	.500-20UNF-3A	.4995 .4970	.987 .958	.348 .327	.781	.030 .020	.010			.0020	12,790	18,800

① DENOTES CHANGE

PREPARING ACTIVITY: NAVY - AS

CUSTODIANS: ARMY - AV NAVY - AS

AIR FORCE - 99 OLA - 15

REVIEW:  
USER:  
PROJECT NUMBER: 5306-1571

## MILITARY SPECIFICATION SHEET

TITLE

BOLT; SELF-LOCKING, 250° F.;  
GRES; 40 KSI F<sub>u</sub>; 80 KSI F<sub>u</sub>;  
PAN HEAD; CROSS RECESSEDSPECIFICATION SHEET NUMBER  
**MS21097** 28 JUN 91  
REV DSUPERSEDING  
**MS21097 C** 25 FEB 91

AMSC - N/A FSC 5306

DISTRIBUTION STATEMENT

A APPROVED FOR PUBLIC RELEASE: DISTRIBUTION IS UNLIMITED.

PAGE 1 OF 3

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE.

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODIGS SPECIFIED IN THE SOLICITATION: MIL - 8 - 7839 AND MIL - F - 18240

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE.

TABLE 11. GRIP LENGTHS AND LENGTHS.

FORM APPROVED  
OMB NO. 0704-0188

LENGTH DASH NO. (a)	GRIP 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
001	.062	.312	.375	.500						
002	.125	.375	.437	.562						
003	.187	.437	.500	.625	.656					
004	.250	.500	.562	.687	.719	.756				
006	.375	.625	.687	.812	.844	.881	.906	1.016		
008	.500	.750	.812	.937	.969	1.006	1.031	1.141	1.156	1.281
010	.625	.875	.937	1.062	1.094	1.131	1.156	1.266	1.281	1.406
012	.750	1.000	1.062	1.187	1.219	1.256	1.281	1.391	1.406	1.531
014	.875	1.125	1.187	1.312	1.344	1.381	1.406	1.516	1.531	1.656
016	1.000	1.250	1.312	1.437	1.469	1.506	1.531	1.641	1.656	1.781
018	1.125	1.375	1.437	1.562	1.594	1.631	1.656	1.766	1.781	1.906
020	1.250	1.500	1.562	1.687	1.719	1.756	1.781	1.891	1.906	2.031
022	1.375	1.625	1.687	1.812	1.844	1.881	1.906	2.016	2.031	2.156
024	1.500	1.750	1.812	1.937	1.969	2.006	2.031	2.141	2.156	2.281
026	1.652	1.875	1.937	2.062	2.094	2.131	2.156	2.266	2.281	2.406
028	1.750	2.000	2.062	2.187	2.219	2.256	2.281	2.391	2.406	2.531
030	1.875		2.187	2.312	2.344	2.381	2.406	2.516	2.531	2.656
032	2.000		2.312	2.437	2.469	2.506	2.531	2.641	2.656	2.781
034	2.125		2.437	2.562	2.594	2.631	2.656	2.766	2.781	2.906
036	2.250		2.562	2.687	2.719	2.756	2.781	2.891	2.906	3.031
038	2.375		2.687	2.812	2.844	2.881	2.906	3.016	3.031	3.156
040	2.500		2.812	2.937	2.969	3.006	3.031	3.141	3.156	3.281
042	2.625				3.094	3.131	3.156	3.266	3.281	3.406
044	2.750				3.219	3.256	3.281	3.391	3.406	3.531
046	2.875				3.344	3.381	3.406	3.516	3.531	3.656
048	3.000				3.469	3.506	3.531	3.641	3.656	3.781
050	3.125				3.594	3.631	3.656	3.766	3.781	3.906
052	3.250									4.031
054	3.375									4.156
056	3.500									4.281
058	3.625									4.406
060	3.750									4.531
062	3.875									4.656
064	4.000									4.781
066	4.125									4.906

- (a) UNASSIGNED DASH NUMBERS SHALL NOT BE USED EXCEPT THOSE DASH NUMBERS INCLUDED BY THE FOLLOWING CODING NOTES: DASH NUMBERS INDICATE PREFERRED GRIP LENGTHS IN .125 INCREMENTS FOR LENGTHS LONGER THAN .250 INCHES. INTERMEDIATE GRIP 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.

PREPARING ACTIVITY: NAVY - AS

CUSTODIANS: ARMY - AY

NAVY - AS

AIR FORCE - 99

DLA - 15

REVIEW:

USER:

PROJECT NUMBER: 5306-1571

## MILITARY SPECIFICATION SHEET

TITLE

BOLT, SELF-LOCKING, 250° F,  
GRES, 48 KSI Fsu, 80 KSI Ftu,  
PAN HEAD, CROSS RECESSED

SPECIFICATION SHEET NUMBER

MS21097

28 JUN 91

REV D

SUPERSEDING

MS21097 C

25 FEB 91

AMSC - N/A

FSC 5306

DISTRIBUTION STATEMENT

A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

PAGE 2 OF 3

REQUIREMENTS:

1. MATERIAL: CORROSION RESISTANT STEEL PER QQ-S-763 THAT WILL PROVIDE IN THE FINISHED BOLT THE STRENGTH AND PERMEABILITY SPECIFIED.
2. TREATMENT: PASSIVATED PER QQ-P-35.
3. SURFACE TEXTURE: THE SURFACE OF THE SHANK, FILLET AND BEARING AREA SHALL NOT EXCEED 125 MICROINCHES PER ANSI/ASME B46.1.
4. MAGNETIC PERMEABILITY: THESE BOLTS HAVE A MAGNETIC PERMEABILITY OF 2.0 MAXIMUM (AIR -1.0) FOR A FIELD OF H=200 OERSTEDS USING MAGNETIC INDICATOR PER MIL-I-17214.
5. LOCKING ELEMENT: IN ACCORDANCE WITH MIL-F-18240. LOCKING ELEMENT AREA, WITH LOCKING ELEMENT INCORPORATED, MUST PASS A RING GAGE EQUAL TO THE MAXIMUM MAJOR THREAD DIAMETER  $+0.0035$ ,  $-0.0000$  FREELY OR WITH FINGER PRESSURE.
6. RECESS: IN ACCORDANCE WITH MS9006.
7. THREAD FORMING: THE THREADS SHALL BE FORMED BY ANY SINGLE ROLLING PROCESS AND IN ACCORDANCE WITH MIL-S-7742.
8. ULTIMATE TENSILE STRENGTH: BASED ON 80 KSI ULTIMATE TENSILE STRENGTH AND CALCULATED BY THE STRESS AREAS INDICATED IN FED-STD-H2B/2.

NOTES:

1. DIMENSIONS ARE IN INCHES.
2. DIMENSIONS AND TOLERANCING SHALL BE INTERPRETED IN ACCORDANCE WITH ANSI/ASME Y14.6M.
3. FOR DESIGN AND USAGE LIMITATIONS SEE MS15981.
4. GRIP LENGTH "G" IS MEASURED FROM UNDERSIDE OF HEAD TO THE END OF FULL CYLINDRICAL PORTION OF SHANK "D".
5. REFERENCE DIMENSIONS ARE FOR DESIGN PURPOSES ONLY AND ARE NOT AN INSPECTION OR MANUFACTURING REQUIREMENT.
6. EXAMPLE OF PART NUMBER: MS21097-4008 = .2500-28 BOLT, .500 GRIP.
7. IN EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.
8. REFERENCED GOVERNMENT (OR NON-GOVERNMENT) DOCUMENTS OF THIS ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DOOISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.

PREPARING ACTIVITY: NAVY - AS

CUSTODIANS: ARMY - AV

NAVY - AS

AIR FORCE - 99

DLA - 15

REVIEW:

USER:

PROJECT NUMBER: 5306-1571

## MILITARY SPECIFICATION SHEET

TITLE

BOLT, SELF-LOCKING, 250° F,  
CRES, 48 KSI Fsu, 80 KSI Flu,  
PAN HEAD, CROSS RECESSED

SPECIFICATION SHEET NUMBER

MS21097

28 JUN 91  
REV D

SUPERSEDING

MS21097 C

25 FEB 91

AMSC - N/A

FSC 5306

DISTRIBUTION STATEMENT

A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

PAGE 3 OF 3