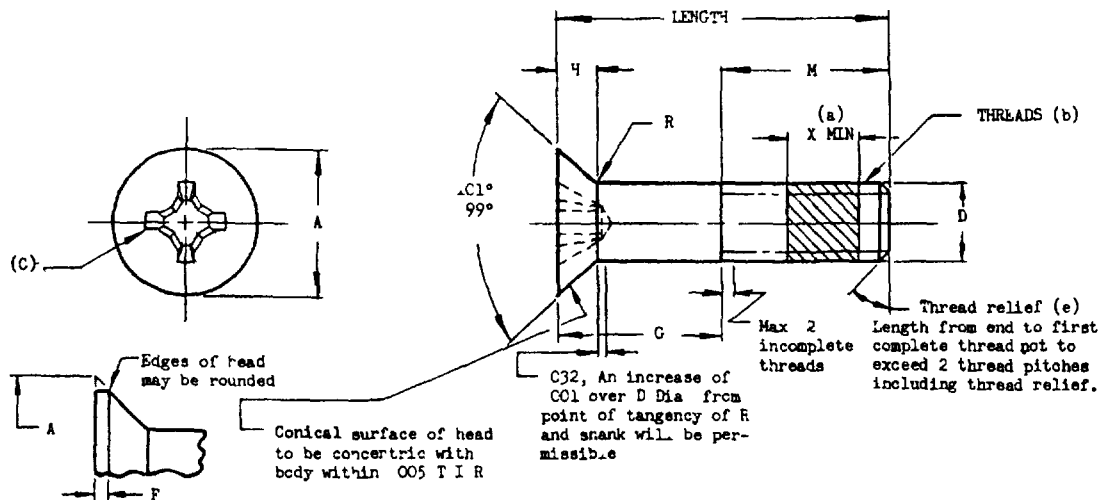


FED SUP CLASS  
5306

| 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       | 200       | 200                     | 0.10  | 0.44  | 250   | 0.15  | 0.05 | 760                          | 1,480                         | 1           |
| 06          | 6-32UNC-3A    | 1380  | 1141 | 279       | 257       | 249                     | 0.14  | 0.55  | 312   |       |      | 1,120                        | 2,240                         | 2           |
| 08          | 8-32UNC-3A    | 1640  | 1610 | 332       | 319       | 283                     | 0.15  | 0.68  | 437   |       |      | 1,740                        | 3,170                         |             |
| 3           | 10-32UNF-3A   | 1890  | 1860 | 385       | 371       | 327                     | 0.16  | 0.80  | 469   |       |      | 2,420                        | 4,250                         | 4           |
| 4           | 1/4-28UNF-3A  | 2490  | 2450 | 507       | 492       | 447                     | 0.18  | 1.06  | 506   | 0.20  | 0.10 | 4,420                        | 7,360                         |             |
| 5           | 5/16-24UNF-3A | 3115  | 3085 | 635       | 610       | 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                        |             |
| 7           | 7/16-20UNF-3A | 4365  | 4325 | 890       | 868       | 805                     | 0.26  | 1.86  | 656   |       |      | 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 =  $3.1416 (E/2 - 3H/16)^2$  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 MS21091-4008 = 1/4-28 colt, 500 grip

DIMENSIONS In inches

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

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

DD FORM 672-1..

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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

FED SUP CLASS

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| LENGTH<br>DASH<br>NO. (a) | ORIP<br>G<br>± .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<br>Other Cust<br>USAF - 11             | TITLE<br>BOLT, SELF-LOCKING, 250° F, STEEL<br>75 KSI Fsu, 125 KSI Ftu, 100° FLUSH HEAD, CROSS RECESSED | MILITARY STANDARD<br><b>MS21091(ASG)</b> |
| PROCUREMENT SPECIFICATION<br>MIL-S-7839 & MIL-F-18240 | SUPERSEDES   | SHEET 2 OF                               |