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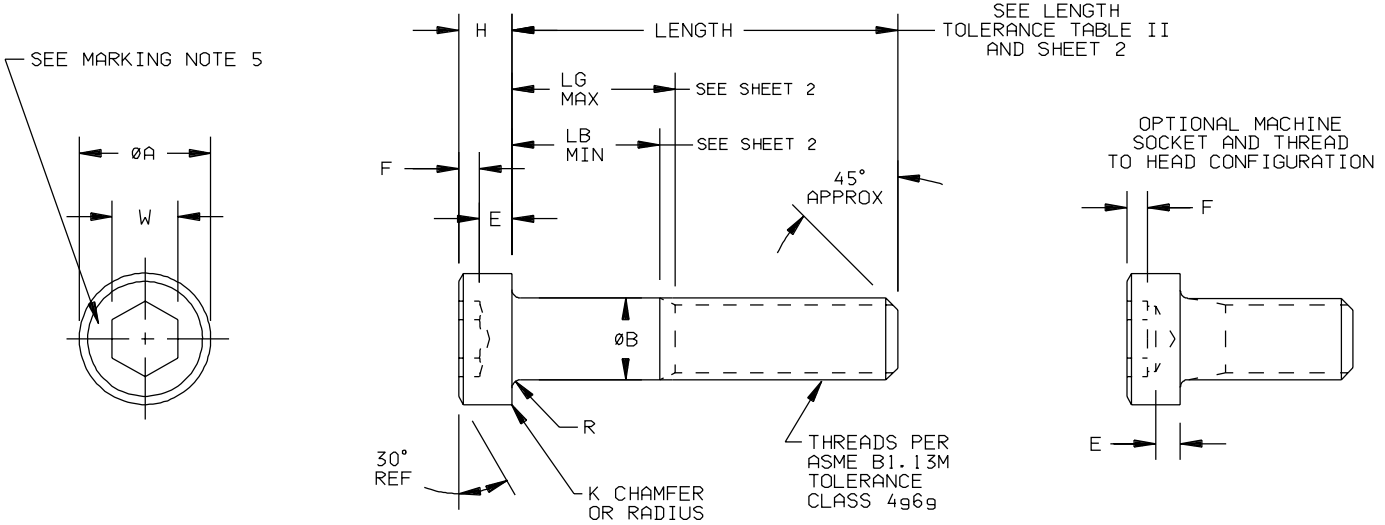


TABLE I

| NOM. DIA. | THREADS   | ØA MAX | ØB    |       | E MIN | F MIN | H MAX | K MAX | R MIN | W NOM | TENSILE STRENGTH kN MIN (a) | RECOMMENDED SEATING TORQUE N·m PLAIN (b) | DOUBLE SHEAR STRENGTH kN (REF ONLY) |
|-----------|-----------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------------------|--|-------------------------------------|
|           |           |        | MAX   | MIN   |       |       |       |       |       |       |                             |  |                                     |
| M4        | MJ4X0.7   | 7.0    | 4.00  | 3.82  | 1.06  | 1.48  | 2.8   | 0.13  | 0.20  | 3.0   | 10.4                        | 4.5                                      | 17.9                                |
| M5        | MJ5X0.8   | 8.5    | 5.00  | 4.82  | 1.39  | 1.85  | 3.5   | 0.13  | 0.20  | 4.0   | 16.9                        | 8.5                                      | 28.0                                |
| M6        | MJ6X1     | 10.0   | 6.00  | 5.82  | 1.65  | 2.09  | 4.0   | 0.20  | 0.25  | 5.0   | 23.9                        | 14.5                                     | 40.4                                |
| M8        | MJ8X1.25  | 13.0   | 8.00  | 7.78  | 2.24  | 2.48  | 5.0   | 0.20  | 0.40  | 6.0   | 43.6                        | 35.0                                     | 71.8                                |
| M10       | MJ10X1.5  | 16.0   | 10.00 | 9.78  | 2.86  | 3.36  | 6.5   | 0.20  | 0.40  | 8.0   | 69.0                        | 70.0                                     | 112.2                               |
| M12       | MJ12X1.75 | 18.0   | 12.00 | 11.73 | 3.46  | 4.26  | 8.0   | 0.25  | 0.60  | 10.0  | 100.3                       | 120.0                                    | 161.5                               |
| M16       | MJ16X2    | 24.0   | 16.00 | 15.73 | 4.91  | 4.76  | 10.0  | 0.25  | 0.60  | 12.0  | 186.4                       | 300.0                                    | 287.1                               |
| M20       | MJ20X2.5  | 30.0   | 20.00 | 19.67 | 6.10  | 6.07  | 12.5  | 0.40  | 0.80  | 14.0  | 291.3                       | 575.0                                    | 448.6                               |

- a). ULTIMATE TENSILE STRENGTH IS CALCULATED USING TENSILE STRESS AREA PER APPENDIX B OF ASME B1.13M AND 1190MPa STRESS LEVEL
- b). TORQUE CALCULATED TO INDUCE 620 MPa IN THE SCREW THREADS. TORQUE VALUES ARE FOR PLAIN ALLOY STEEL SCREWS. FOR CADMIUM PLATED SCREWS, MULTIPLY RECOMMENDED SEATING TORQUE BY .75; FOR ZINC PLATED SCREWS MULTIPLY BY 1.40.

TABLE II

| LENGTH TOLERANCE, mm |           |
|----------------------|-----------|
| NOMINAL SCREW LENGTH | TOLERANCE |
| UP TO 50, INCL       | ±0.25     |
| OVER 50 TO 80, INCL  | ±0.5      |
| OVER 80 INCL         | ±0.7      |

- MATERIAL: ALLOY STEEL PER ASTM A574M.
- HARDNESS: PER THE REQUIREMENTS OF ASTM A574M.
- FINISH: SEE NOTE 6.
- DIMENSIONS AND GEOMETRIC TOLERANCING PER ASME B18.3.1M - INCLUDING MANUFACTURING NOTES NOT LISTED IN THIS DRAWING.
- MARK SPS\* MANUFACTURER'S IDENTIFICATION, LOCATION OPTIONAL ON TOP OR SIDE OF HEAD.
- PART NUMBER: 95843( )-( )-( ) ( )

FINISH: B = CHEMICAL BLACK OXIDE PER MIL-DTL-13924.  
 C = CADMIUM PLATE PER AMS-QQ-P-416, TYPE I, CLASS 3.  
 D = CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3.  
 H = CADMIUM PLATE PER AMS-QQ-P-416, TYPE I, CLASS 2.  
 J = CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 2. (YELLOW CHROMATE)  
 M = CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 2. (OLIVE DRAB)  
 S = SILVER PLATE PER AMS 2410.  
 U = ZINC PLATE PER ASTM B633 TYPE III SCI.  
 Z = ZINC PLATE PER ASTM B633 TYPE II SCI.  
 NO LETTER = THERMAL OXIDE (BLACK) PLUS RUST PREVENTATIVE OIL.

LENGTH IN MILLIMETERS  
 DIAMETER PER TABULATION  
 LOCKING FEATURE - NO LETTER = NO LOCKING FEATURE  
 E = TYPE P (PATCH) PER MIL-DTL-18240  
 K = TYPE N (PELLET) PER MIL-DTL-18240.

7. DIMENSIONS ARE IN MILLIMETERS.

|   |   |  |   |
|---|---|--|---|
| TOLERANCES ±0.25 AND ±2°<br>SURFACE ROUGHNESS 3.2<br>UNLESS OTHERWISE NOTED | FSCM NO. 56878<br>CUSTODIAN:<br>JENKINTOWN, PA. | TITLE<br>SCREW, SOCKET HEAD CAP, LOW HEAD,<br>HEXAGON RECESS, ALLOY STEEL<br>1190MPa | STANDARDS AND SPECIFICATIONS<br>ASTM A574M<br>EXCEPT AS NOTED |
| DRAFTED IN ACCORDANCE WITH ANSI Y14.5M-1982                                 | DATE: 4/09/01                                   |  | PART NUMBER:<br>95843( )-( )-( ) ( )                          |
| APPROVED: S FOSTER  | DATE: 10/26/04                                  |  |   |
| APPROVED: F CICCARONE   |   |  | SHEET 1 OF 2  |



TABLE III

FOR LENGTHS SHORTER THAN LISTED, (LENGTHS ABOVE HEAVY LINE)  
SCREWS WILL BE THREADED AS CLOSE TO THE HEAD AS PRACTICABLE (APPROX. WITHIN 2 THREAD PITCHES).

| NOM. DIA. | M4   |      | M5   |      | M6   |      | M8    |       | M10   |       | M12   |       | M16   |       | M20   |       |
|-----------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|           | LG   | LB   | LG   | LB   | LG   | LB   | LG    | LB    | LG    | LB    | LG    | LB    | LG    | LB    | LG    | LB    |
| 20        |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |
| 25        |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |
| 30        | 10.0 | 6.5  |      |      |      |      |       |       |       |       |       |       |       |       |       |       |
| 35        | 15.0 | 11.5 | 13.0 | 9.0  | 11.0 | 6.0  |       |       |       |       |       |       |       |       |       |       |
| 40        | 20.0 | 16.5 | 18.0 | 14.0 | 16.0 | 11.0 |       |       |       |       |       |       |       |       |       |       |
| 45        | 25.0 | 21.5 | 23.0 | 19.0 | 21.0 | 16.0 | 17.0  | 10.7  |       |       |       |       |       |       |       |       |
| 50        | 30.0 | 26.5 | 28.0 | 24.0 | 26.0 | 21.0 | 22.0  | 15.7  | 18.0  | 10.5  |       |       |       |       |       |       |
| 55        | 35.0 | 31.5 | 33.0 | 29.0 | 31.0 | 26.0 | 27.0  | 20.7  | 23.0  | 15.5  |       |       |       |       |       |       |
| 60        | 40.0 | 36.5 | 38.0 | 34.0 | 36.0 | 31.0 | 32.0  | 25.7  | 28.0  | 20.5  | 24.0  | 15.2  |       |       |       |       |
| 65        | 45.0 | 41.5 | 43.0 | 39.0 | 41.0 | 36.0 | 37.0  | 30.7  | 33.0  | 25.5  | 29.0  | 20.2  |       |       |       |       |
| 70        | 50.0 | 46.5 | 48.0 | 44.0 | 46.0 | 41.0 | 42.0  | 35.7  | 38.0  | 30.5  | 34.0  | 25.2  | 26.0  | 16.0  |       |       |
| 80        | 60.0 | 56.5 | 58.0 | 54.0 | 56.0 | 51.0 | 52.0  | 45.7  | 48.0  | 40.5  | 44.0  | 35.2  | 36.0  | 26.0  |       |       |
| 90        |      |      | 68.0 | 64.0 | 66.0 | 61.0 | 62.0  | 55.7  | 58.0  | 50.5  | 54.0  | 45.2  | 46.0  | 36.0  | 38.0  | 25.5  |
| 100       |      |      | 78.0 | 74.0 | 76.0 | 71.0 | 72.0  | 65.7  | 68.0  | 60.5  | 64.0  | 55.2  | 56.0  | 46.0  | 48.0  | 35.5  |
| 110       |      |      |      |      | 86.0 | 81.0 | 82.0  | 75.7  | 78.0  | 70.5  | 74.0  | 65.2  | 66.0  | 56.0  | 58.0  | 45.5  |
| 120       |      |      |      |      | 96.0 | 91.0 | 92.0  | 85.7  | 88.0  | 80.5  | 84.0  | 75.2  | 76.0  | 66.0  | 68.0  | 55.5  |
| 130       |      |      |      |      |      |      | 102.0 | 95.7  | 98.0  | 90.5  | 94.0  | 85.2  | 86.0  | 76.0  | 78.0  | 65.5  |
| 140       |      |      |      |      |      |      | 112.0 | 105.7 | 108.0 | 100.5 | 104.0 | 95.2  | 96.0  | 86.0  | 88.0  | 75.5  |
| 150       |      |      |      |      |      |      | 122.0 | 115.7 | 118.0 | 110.5 | 114.0 | 105.2 | 106.0 | 96.0  | 98.0  | 85.5  |
| 160       |      |      |      |      |      |      | 132.0 | 125.7 | 128.0 | 120.5 | 124.0 | 115.2 | 116.0 | 106.0 | 108.0 | 95.5  |
| 180       |      |      |      |      |      |      |       |       | 148.0 | 140.5 | 144.0 | 135.2 | 136.0 | 126.0 | 128.0 | 115.5 |
| 200       |      |      |      |      |      |      |       |       | 168.0 | 160.5 | 164.0 | 155.2 | 156.0 | 146.0 | 148.0 | 135.5 |
| 220       |      |      |      |      |      |      |       |       |       |       | 184.0 | 175.2 | 176.0 | 166.0 | 168.0 | 155.5 |
| 240       |      |      |      |      |      |      |       |       |       |       | 204.0 | 195.2 | 196.0 | 186.0 | 188.0 | 175.5 |
| 260       |      |      |      |      |      |      |       |       |       |       |       |       | 216.0 | 206.0 | 208.0 | 195.5 |
| 300       |      |      |      |      |      |      |       |       |       |       |       |       | 256.0 | 246.0 | 248.0 | 235.5 |

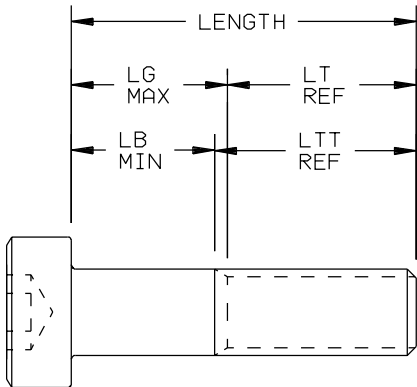


TABLE IV

| NOM. DIA. | LT THREAD LENGTH MIN | LTT TOTAL THREAD LENGTH MAX |
|-----------|----------------------|-----------------------------|
| M4        | 20.0                 | 23.5                        |
| M5        | 22.0                 | 26.0                        |
| M6        | 24.0                 | 29.0                        |
| M8        | 28.0                 | 34.3                        |
| M10       | 32.0                 | 39.5                        |
| M12       | 36.0                 | 44.8                        |
| M16       | 44.0                 | 54.0                        |
| M20       | 52.0                 | 64.5                        |

THE LENGTH OF COMPLETE THREAD "LT" SHALL BE CONTROLLED BY THE GRIP LENGTH "LG" AS DESCRIBED IN NOTE A), AND THE LENGTH OF TOTAL THREAD "LTT" SHALL BE CONTROLLED BY THE BODY LENGTH "LB" AS SET FORTH IN NOTE B). THE "LT" MINIMUM AND "LTT" MAXIMUM VALUES SHOWN IN TABLE IV ARE REFERENCE DIMENSIONS INTENDED FOR CALCULATION PURPOSES ONLY IN ACCORDANCE WITH NOTE C). SEE SKETCH ABOVE.

- A) THE GRIP LENGTH "LG" SHALL BE MAXIMUM AND REPRESENTS THE MINIMUM DESIGN GRIP LENGTH OF THE SCREW. IT SHALL BE MEASURED, PARALLEL TO THE AXIS OF SCREW, FROM THE BEARING SURFACE OF THE HEAD TO THE FACE OF A "GO" THREAD RING GAGE, HAVING THE COUNTERSINK AND/OR COUNTERBORE REMOVED, WHICH HAS BEEN ASSEMBLED BY HAND AS FAR AS THE THREAD WILL PERMIT. THE "LG" MAXIMUM LENGTH IS A CRITERION FOR ACCEPTANCE AND SHALL CONFORM TO THE VALUES GIVEN IN TABLE III OR, FOR DIAMETER/LENGTH COMBINATIONS NOT SHOWN THEREIN, SHALL BE AS CALCULATED PER NOTE C).
- B) THE BODY LENGTH "LB" SHALL BE MINIMUM AND REPRESENTS THE MINIMUM FULL BODY LENGTH OF THE SCREW. IT SHALL BE MEASURED, PARALLEL TO THE AXIS OF THE SCREW, FROM THE BEARING SURFACE OF THE HEAD TO THE TOP OF THE EXTRUSION ANGLE OR TO THE LAST SCRATCH OF THE THREAD. THE "LB" MINIMUM LENGTH IS A CRITERION FOR ACCEPTANCE AND SHALL CONFORM TO THE VALUES GIVEN IN TABLE III OR, FOR DIAMETER/LENGTH COMBINATIONS NOT SHOWN THEREIN, SHALL BE AS CALCULATED IN ACCORDANCE WITH NOTE C).
- C) FOR SCREWS OF NOMINAL LENGTHS NOT LISTED IN TABLE III AND FOR NOMINAL SIZES LARGER THAN 24mm, THE MAXIMUM GRIP LENGTH "LG" AND MINIMUM BODY LENGTH "LB" SHALL BE DETERMINED FROM THE FOLLOWING FORMULAS:  
 $LG = L - LT$   
 $LB = L - LTT$   
 WHERE: L = NOMINAL SCREW LENGTH; LT = MINIMUM THREAD LENGTH FROM TABLE IV;  
 LTT = MAXIMUM TOTAL THREAD LENGTH FROM TABLE IV.  
 SCREWS HAVING NOMINAL LENGTHS FALLING BETWEEN THOSE FOR WHICH "LG" AND "LB" VALUES ARE TABULATED IN TABLE IV, SHALL HAVE "LG" AND "LB" DIMENSIONS CONFORMING TO THOSE OF THE NEXT SHORTER TABULATED NOMINAL LENGTH FOR THE RESPECTIVE SCREW SIZES.

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TOLERANCES ±0.25 AND ±2\*  
SURFACE ROUGHNESS 3.2  
UNLESS OTHERWISE NOTED

DRAFTED IN ACCORDANCE WITH ANSI Y14.5M 1982



PART NUMBER: 95843( )-( )-( )( )  
SHEET 2 OF 2