



PROPRIETARY INFORMATION  
 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

DRAWING NUMBER  
 SD. 300.95842  
 ISSUE DATE  
 7/18/00  
 REVISION  
 (1) 3/21/2001  
 (2)  
 (3) 3/07/03  
 10/13/04

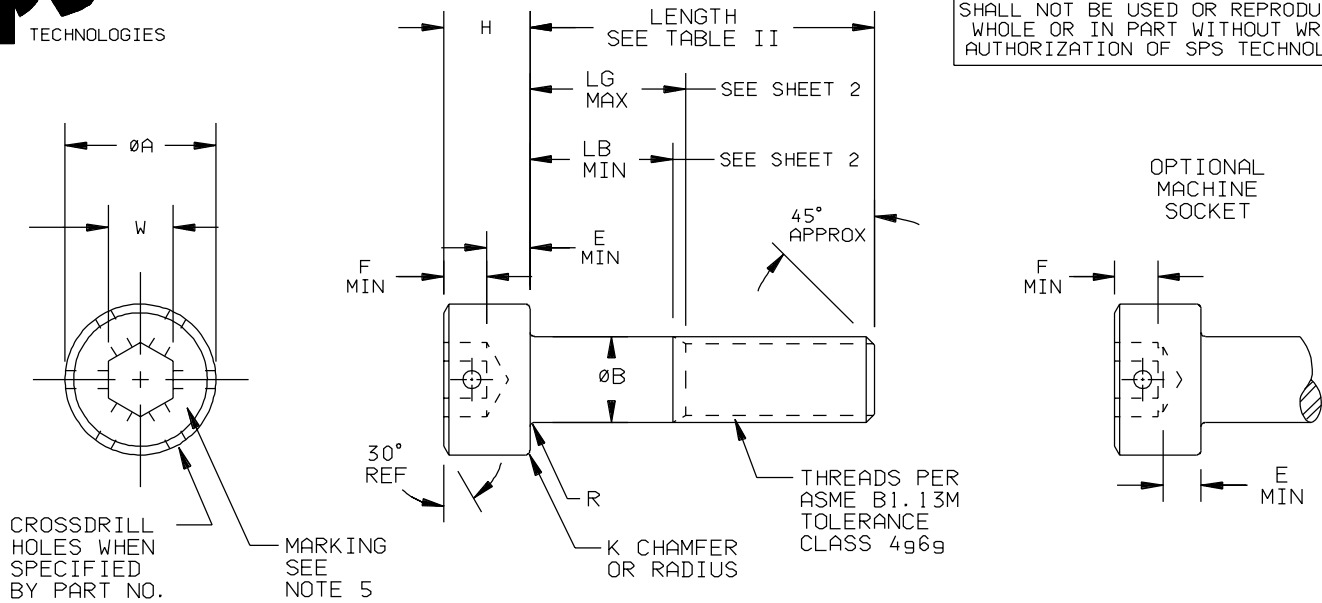


TABLE I

BASIC THREAD DIAMETER	ØA	ØB	E MIN	F MIN	H	K MAX	JUNCTURE R MIN	W	DOUBLE SHEAR STRENGTH kN (REF ONLY)	COARSE THREAD PITCH	TENSILE STRENGTH kN MINIMUM	FINE THREAD PITCH	TENSILE STRENGTH kN MINIMUM
M1.6	3.00 2.87	1.60 1.46	0.54	0.8	1.60 1.52	.08	.10	1.54 1.52	2	0.35	0.70	-	-
M2	3.80 3.65	2.00 1.86	0.68	1.00	2.00 1.91	.08	.10	1.54 1.52	4	0.40	1.14	-	-
M2.5	4.50 4.33	2.50 2.36	0.85	1.25	2.50 2.40	.08	.10	2.04 2.02	5	0.45	1.86	-	-
M3	5.50 5.32	3.00 2.86	1.02	1.50	3.00 2.89	.13	.10	2.56 2.52	8	0.5	2.77	-	-
M4	7.00 6.80	4.00 3.82	1.52	2.00	4.00 3.88	.13	.20	3.07 3.02	14	0.7	4.83	-	-
M5	8.50 8.27	5.00 4.82	1.90	2.50	5.00 4.86	.13	.20	4.08 4.02	22	0.8	7.80	-	-
M6	10.00 9.74	6.00 5.82	2.28	3.00	6.00 5.85	.20	.25	5.08 5.02	31	1	11.1	-	-
M8	13.00 12.70	8.00 7.78	3.20	4.00	8.00 7.83	.20	.40	6.09 6.02	55	1.25	20	1	22
M10	16.00 15.67	10.00 9.78	4.00	5.00	10.00 9.81	.20	.40	8.11 8.02	86	1.5	32	1	35
M12	18.00 17.63	12.00 11.73	4.80	6.00	12.00 11.79	.25	.60	10.12 10.02	124	1.75	46	1.25	51
M14	21.00 20.60	14.00 13.73	5.60	7.00	14.00 13.77	.25	.60	12.14 12.03	169	2	63	1.5	69
M16	24.00 23.58	16.00 15.73	6.40	8.00	16.00 15.76	.25	.60	14.15 14.03	221	2	86	1.5	92
M20	30.00 29.53	20.00 19.67	8.00	10.00	20.00 19.73	.40	.80	17.21 17.05	346	2.5	135	1.5	149
M24	36.00 35.48	24.00 23.67	9.60	12.00	24.00 23.70	.40	.80	19.24 19.06	498	3	194	2	211
M30	45.00 44.42	30.00 29.67	12.00	15.00	30.00 29.67	.40	1.00	22.31 22.06	780	3.5	308	2	342
M36	54.00 53.37	36.00 35.61	14.40	18.00	36.00 35.64	.40	1.00	27.31 27.06	1120	4	449	2	503

SIZES M1.6 TO M36 = 550 MPa UTS  
 ULTIMATE TENSILE STRENGTH CALCULATED USING TENSILE STRESS AREA  
 PER APPENDIX B OF ASME B1.13M AND STRESS LEVEL LISTED ABOVE.

TABLE II

LENGTH TOLERANCE TABLE M1.6 THRU M36	
NOMINAL SCREW LENGTH, mm	TOLERANCE ON LENGTH, mm
UP TO 50, INCLUDED	±0.25
OVER 50 TO 80, INCLUDED	±0.5
OVER 80 TO 120, INCLUDED	±0.7
OVER 120 TO 250, INCLUDED	±0.8
OVER 250	±1.0

TOLERANCES ±0.25 AND ±2°  
 SURFACE ROUGHNESS 3.2  
 UNLESS OTHERWISE NOTED  
 DRAFTED IN ACCORDANCE WITH ANSI Y14.5M-1982  
 DRAWN BY: STEVE FOSTER DATE: 7/18/00  
 APPROVED: S FOSTER  
 APPROVED: F CICCARONE DATE: 10/26/04

FSCM NO. 56878  
 CUSTODIAN:  
 JENKINTOWN, PA.  
 TITLE  
 SOCKET HEAD CAP SCREW, METRIC  
 AUSTENITIC STAINLESS STEEL  
 550 MPa UTS

STANDARDS AND SPECIFICATIONS  
 ASTM F837M  
 EXCEPT AS NOTED  
 PART NUMBER:  
 95842  
 SHEET 1 OF 3

TABLE III

SIZE	M1.6		M2		M2.5		M3		M4		M5		M6		M8		M10	
	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>
20	4.8	3.0	4.0	2.0														
25	9.8	8.0	9.0	7.0	8.0	5.7	7.0	4.5										
30	14.8	13.0	14.0	12.0	13.0	10.7	12.0	9.5	10.0	6.5								
35			19.0	17.0	18.0	15.7	17.0	14.5	15.0	11.5	13.0	9.0	11.0	6.0				
40			24.0	22.0	23.0	20.7	22.0	19.5	20.0	16.5	18.0	14.0	16.0	11.0				
45					28.0	25.7	27.0	24.5	25.0	21.5	23.0	19.0	21.0	16.0	17.0	10.7		
50					33.0	30.7	32.0	29.5	30.0	26.5	28.0	24.0	26.0	21.0	22.0	15.7	18.0	10.5
55							37.0	34.5	35.0	31.5	33.0	29.0	31.0	26.0	27.0	20.7	23.0	15.5
60							42.0	39.5	40.0	36.5	38.0	34.0	36.0	31.0	32.0	25.7	28.0	20.5
65							47.0	44.5	45.0	41.5	43.0	39.0	41.0	36.0	37.0	30.7	33.0	25.5
70									50.0	46.5	48.0	44.0	46.0	41.0	42.0	35.7	38.0	30.5
80									60.0	56.5	58.0	54.0	56.0	51.0	52.0	45.7	48.0	40.5
90											68.0	64.0	66.0	61.0	62.0	55.7	58.0	50.5
100											78.0	74.0	76.0	71.0	72.0	65.7	68.0	60.5
110													86.0	81.0	82.0	75.7	78.0	70.5
120													96.0	91.0	92.0	85.7	88.0	80.5
130															102.0	95.7	98.0	90.5
140															112.0	105.7	108.0	100.5
150															122.0	115.7	118.0	110.5
160															132.0	125.7	128.0	120.5
180																	148.0	140.5
200																	168.0	160.5

SIZE	M12		M14		M16		M20		M24	
	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>	L <sub>G</sub>	L <sub>B</sub>
60	24.0	15.2								
65	29.0	20.2	25.0	15.0						
70	34.0	25.2	30.0	20.0	26.0	16.0				
80	44.0	35.2	40.0	30.0	36.0	26.0				
90	54.0	45.2	50.0	40.0	46.0	36.0	38.0	25.5		
100	64.0	55.2	60.0	50.0	56.0	46.0	48.0	35.5	40.0	25.0
110	74.0	65.2	70.0	60.0	66.0	56.0	58.0	45.5	50.0	35.0
120	84.0	75.2	80.0	70.0	76.0	66.0	68.0	55.5	60.0	45.0
130	94.0	85.2	90.0	80.0	86.0	76.0	78.0	65.5	70.0	55.0
140	104.0	95.2	100.0	90.0	96.0	86.0	88.0	75.5	80.0	65.0
150	114.0	105.2	110.0	100.0	106.0	96.0	98.0	85.5	90.0	75.0
160	124.0	115.2	120.0	110.0	116.0	106.0	108.0	95.5	100.0	85.0
180	144.0	135.2	140.0	130.0	136.0	126.0	128.0	115.5	120.0	105.0
200	164.0	155.2	160.0	150.0	156.0	146.0	148.0	135.5	140.0	125.0
220	184.0	175.2	180.0	170.0	176.0	166.0	168.0	155.5	160.0	145.0
240	204.0	195.2	200.0	190.0	196.0	186.0	188.0	175.5	180.0	165.0
260			220.0	210.0	216.0	206.0	208.0	195.5	200.0	185.0
300					256.0	246.0	248.0	235.5	240.0	225.0

DRAWING NUMBER  
 SD. 300. 95842  
 ISSUE DATE  
 7/18/00  
 REVISION  
 ① 3/21/2001  
 ② 3/07/03  
 ③ 10/13/04

TOLERANCES ±0.25 AND ±2°  
 SURFACE ROUGHNESS 3.2  
 UNLESS OTHERWISE NOTED

DRAFTED  
 IN ACCORDANCE  
 WITH ANSI Y14.5M  
 1982



PART NUMBER:  
 95842

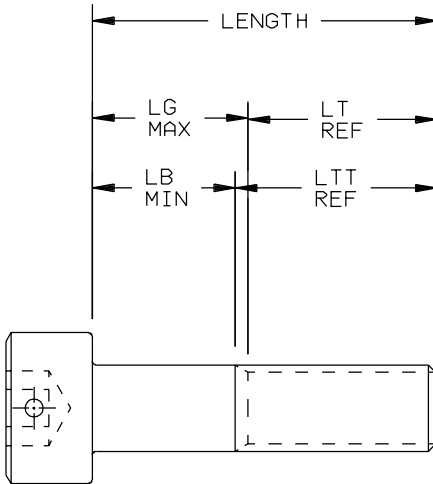


DRAWING NUMBER  
**SD. 300. 95842**  
 ISSUE DATE  
 7/18/00  
 REVISION  
 ① 3/21/2001  
 ② 3/07/03  
 ③ 10/13/04

TABLE IV

BASIC THREAD DIAMETER	LT THREAD LENGTH MIN	LTT THREAD LENGTH MAX
M1.6	15.2	17.0
M2	16.0	18.0
M2.5	17.0	19.3
M3	18.0	20.5
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
M14	40.0	50.0
M16	44.0	54.0
M20	52.0	64.5
M24	60.0	75.0
M30	72.0	89.5
M36	84.0	104.0

TABULATED VALUES ARE EQUAL TO "LT" PLUS 5 TIMES THE PITCH OF THE COARSE THREAD FOR THE RESPECTIVE SCREW SIZES.



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 LENGTH 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:  
 $LG = LENGTH - LT$   
 $LB = LENGTH - LTT$   
 WHERE: LENGTH = NOMINAL SCREW LENGTH; LT = MINIMUM THREAD LENGTH FROM TABLE IV;  
 LTT = MAXIMUM TOTAL THREAD LENGTH FROM TABLE IV.  
 SCREWS HAVING NOMINAL LENGTH 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 SIZE.

1. MATERIAL: AUSTENITIC STAINLESS STEEL PER CHEMISTRY OF ASTM F837M.
2. FINISH: SEE NOTE 7.
3. FLUORESCENT PENETRANT INSPECT PER ASTM E1417.
4. DIMENSIONS AND GEOMETRIC TOLERANCING PER ASME/ANSI B18.3.1M.
5. MARK SPS' MANUFACTURER'S IDENTIFICATION, LOCATION OPTIONAL ON TOP OR SIDE OF HEAD.
6. DIMENSIONS ARE IN MILLIMETERS.
7. PART NUMBERING: 95842( ) ( ) - ( ) X ( ) - ( ) ( )

- 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 AMS2410.
- U-ZINC PLATE PER ASTM B633 TYPE III SCI.
- Z-ZINC PLATE PER ASTM B633 TYPE II SCI.
- NO LETTER-PASSIVATE PER AMS-QQ-P-35

- = LENGTH IN MILLIMETERS
- THREAD PITCH PER TABULATION
- = BASIC THREAD 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

- CROSSDRILL HEADS: H1 = 1 HOLE THRU
- H2 = 2 HOLES THRU
- H3 = 3 HOLES THRU
- DIMENSIONS PER ASME B18.3.1M

BASIC PART NUMBER

TOLERANCES ±0.25 AND ±2%  
 SURFACE ROUGHNESS 3.2  
 UNLESS OTHERWISE NOTED

DRAFTED IN ACCORDANCE WITH ANSI Y14.5M 1982



PART NUMBER:  
**95842**