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DRAWING NUMBER
SPS-B-95828

ISSUE DATE
 1/11/01

REVISION

- ① 10/30/02
- ② 3/07/03
- ③ 10/13/04

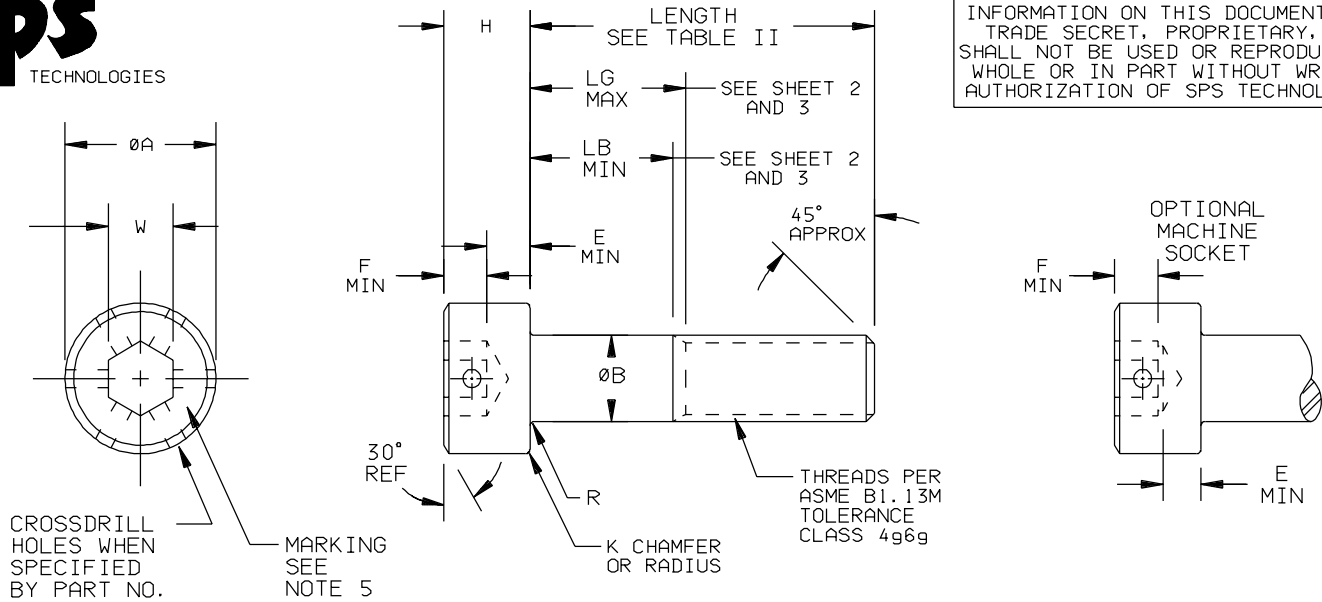


TABLE I

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	3	0.35	1.4	-	-
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	2.3	-	-
M2.5	4.50 4.33	2.50 2.36	0.85	1.25	2.50 2.40	.08	.10	2.04 2.02	6	0.45	3.7	-	-
M3	5.50 5.32	3.00 2.86	1.02	1.50	3.00 2.89	.13	.10	2.56 2.52	9	0.5	5.5	-	-
M4	7.00 6.80	4.00 3.82	1.52	2.00	4.00 3.88	.13	.20	3.07 3.02	16	0.7	9.7	-	-
M5	8.50 8.27	5.00 4.82	1.90	2.50	5.00 4.86	.13	.20	4.08 4.02	26	0.8	16	-	-
M6	10.00 9.74	6.00 5.82	2.28	3.00	6.00 5.85	.20	.25	5.08 5.02	37	1	22	-	-
M8	13.00 12.70	8.00 7.78	3.20	4.00	8.00 7.83	.20	.40	6.09 6.02	65	1.25	40	1	43
M10	16.00 15.67	10.00 9.78	4.00	5.00	10.00 9.81	.20	.40	8.11 8.02	102	1.5	64	1	71
M12	18.00 17.63	12.00 11.73	4.80	6.00	12.00 11.79	.25	.60	10.12 10.02	147	1.75	93	1.25	101
M14	21.00 20.60	14.00 13.73	5.60	7.00	14.00 13.77	.25	.60	12.14 12.03	200	2	127	1.5	137
M16	24.00 23.58	16.00 15.73	6.40	8.00	16.00 15.76	.25	.60	14.15 14.03	261	2	172	1.5	184
M20	30.00 29.53	20.00 19.67	8.00	10.00	20.00 19.73	.40	.80	17.21 17.05	408	2.5	269	1.5	299
M24	36.00 35.48	24.00 23.67	9.60	12.00	24.00 23.70	.40	.80	19.24 19.06	588	3	388	2	423
M30	45.00 44.42	30.00 29.67	12.00	15.00	30.00 29.67	.40	1.00	22.31 22.06	919	3.5	617	2	683
M36	54.00 53.37	36.00 35.61	14.40	18.00	36.00 35.64	.40	1.00	27.31 27.06	1323	4	898	2	1006

SIZES M1.6 TO M36 = 1100 MPa UTS AND 650 MPa USS
 ULTIMATE TENSILE STRENGTH CALCULATED USING TENSILE STRESS AREA
 PER APPENDIX B OF ASME B1.13M AND STRESS LEVEL LISTED ABOVE.
 DOUBLE SHEAR STRENGTH CALCULATED USING AREA AT NOMINAL BODY DIAMETER
 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: KATHY SCHWARTZ DATE: 1/11/01
 APPROVED: S FOSTER
 APPROVED: F CICCARONE DATE: 10/14/04

FSCM NO. 56878
 CUSTODIAN:
 JENKINTOWN, PA.
 TITLE
**SOCKET HEAD CAP SCREW, METRIC
 1100 MPa UTS, A286**

STANDARDS AND SPECIFICATIONS
 ASTM F837M
 EXCEPT AS NOTED
 PART NUMBER:
95828



TABLE III

SIZE	M1.6		M2		M2.5		M3		M4		M5		M6		M8		M10	
	L _G	L _B	L _G	L _B	L _G	L _B	L _G	L _B	L _G	L _B	L _G	L _B	L _G	L _B	L _G	L _B	L _G	L _B
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 _G	L _B	L _G	L _B	L _G	L _B	L _G	L _B	L _G	L _B
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

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

DRAFTED
IN ACCORDANCE
WITH ANSI Y14.5M
1982



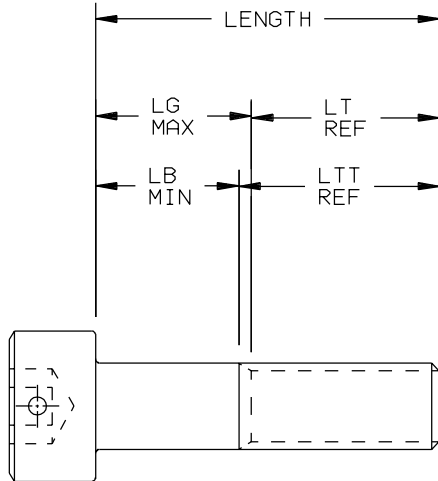
PART NUMBER :
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TABLE IV

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: A286 PER AMS 5853.
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: 95828() () - () 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
 TF-TRU-FLEX
 CROSSDRILL HEADS: H1 = 1 HOLE THRU
 H2 = 2 HOLES THRU
 H3 = 3 HOLES THRU
 NO LETTER = NO HOLES

BASIC PART NUMBER

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

DRAFTED
 IN ACCORDANCE
 WITH ANSI Y14.5M
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