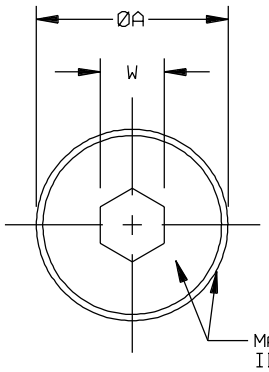
SPS TECHNOLOGIES

DRAWING NUMBER **SPS-B-94704**

ISSUE DATE 11/22/96

REVISION (9) 10/27/03 (10) 11/04/03 (11) 10/13/04



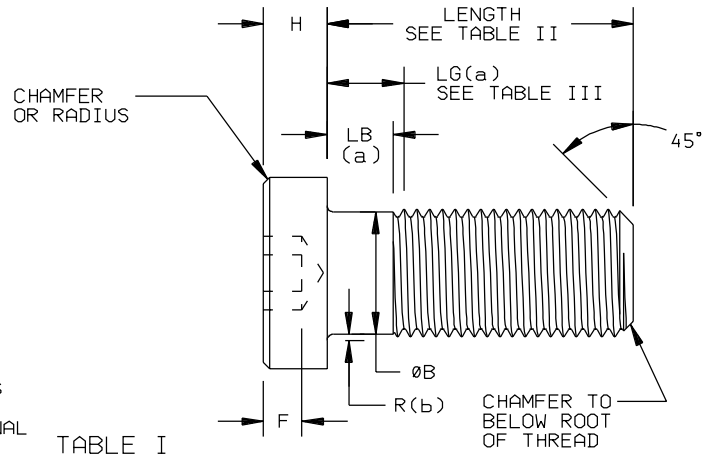


TABLE I

DASH NUMBER	NOMINAL DIAMETER	THREADS PER INCH UNRC	THREADS PER INCH UNRF	CLASS	ØA MAX/MIN	ØB MAX/MIN	F MIN	H MAX/MIN	R FILLET EXTENSION MAX/MIN	W NOM
-94	#4	40	48	3A	.183/.178	.1120/.1075	.041	.059/.053	.009/.005	.0500
-95	#5	40	44	3A	.205/.200	.1250/.1202	.046	.065/.059	.010/.006	.0625
-96	#6	32	40	3A	.226/.221	.1380/.1329	.050	.072/.066	.010/.006	.0625
-98	#8	32	36	3A	.270/.265	.1640/.1585	.060	.085/.079	.012/.007	.0781
-3	#10	24	32	3A	.312/.307	.1900/.1840	.072	.098/.092	.014/.009	.0938
-4	1/4	20	28	3A	.375/.369	.2500/.2435	.094	.127/.121	.014/.009	.1250
-5	5/16	18	24	3A	.437/.431	.3125/.3053	.111	.158/.152	.017/.012	.1562
-6	3/8	16	24	3A	.562/.556	.3750/.3678	.134	.192/.182	.020/.015	.1875
-8	1/2	13	20	3A	.750/.743	.5000/.4919	.178	.254/.244	.026/.020	.2500
-10	5/8	11	18	3A	.938/.921	.6250/.6163	.225	.316/.306	.032/.024	.3125
-12	3/4	10	16	3A	1.125/1.107	.7500/.7406	.263	.376/.366	.039/.030	.3750
-14	7/8	9	14	3A	1.312/1.293	.8750/.8647	.307	.438/.428	.044/.034	.5000
-16	1	8	12	3A	1.500/1.479	1.0000/.9886	.359	.500/.489	.050/.040	.5620
-18	1-1/8	7	12	3A	1.688/1.665	1.1250/1.1086	.396	.565/.554	.055/.045	.6250

(a) THE MINIMUM USABLE THREAD LENGTH SHALL BE EQUAL TO TWO TIMES THE NOMINAL DIAMETER + .500 INCH. FOR GRIP LENGTHS, SEE TABLE III ON SHEET 2.

(b) IMPERFECT THREADS NOT TO ENTER INTO FILLET AREA.

TABLE II

LENGTH TOLERANCE			
DIAMETER	TO 1"	OVER 1" TO 2-1/2"	OVER 2-1/2"
ALL	-.03	-.04	-.06

1. MATERIAL: ALLOY STEEL PER CHEMISTRY OF ASTM A574.
2. HEAT TREATMENT: PER THE REQUIREMENTS OF ASTM A574.
3. FINISH: SEE NOTE 8.
4. DIMENSIONS, GEOMETRIC TOLERANCE PER ASME B18.3 - INCLUDING MANUFACTURING NOTES NOT LISTED IN THIS DRAWING.
5. MANUFACTURING REQUIREMENTS: HEADS TO BE FORGED.
   SOCKET MAY BE FORGED OR MACHINED.
   THREADS TO BE ROLLED.
   FOR #4 SIZE ONLY, BROACHING CHIPS MAY REMAIN BUT BE FIRMLY ATTACHED - NO LOOSE CHIPS ALLOWED.
6. TENSILE LOAD MINIMUM: BASED ON THE TENSILE STRESS AREA PER ASME B1.1 X 170,000 PSI.
7. WEDGE TEST NOT REQUIRED.
8. PART NUMBERING: 94704 ( ) - ( )( ) - ( )( )

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 I, CLASS 2. (YELLOW CHROMATE)
M-CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 2 (OLIVE DRAB)
N-NICKEL CADMIUM PER AMS 2416
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 SIXTEENTHS

THREAD = C-COARSE
F-FINE

= DASH NUMBER 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

BASIC PART NUMBER

TOLERANCES ±.010 AND ±2° SURFACE ROUGHNESS 125 UNLESS OTHERWISE NOTED	FSCM NO. 56878 CUSTODIAN: JENKINTOWN, PA.	TITLE: BOLT, SOCKET HEAD CAP, LOW HEAD TYPE 170 KSI U.T.S.
DRAFTED IN ACCORDANCE WITH ANSI Y14.5M-1982		STANDARDS AND SPECIFICATIONS FF-S-86 EXCEPT AS NOTED
DRAWN BY: STEVE FOSTER	DATE: 11/22/96	PART NUMBER: 94704( )-( )( )-( )( )
APPROVED: S FOSTER	DATE: 10/26/04	SHEET 1 OF 2
APPROVED: F CICCARONE		

FR-020

SPS TECHNOLOGIES

TABLE III

FOR LENGTHS SHORTER THAN LISTED, (LENGTHS ABOVE HEAVY LINE) SCREWS WILL BE THREADED TO WITHIN 2-1/2 THREAD PITCHES OF THE HEAD.

BODY AND GRIP LENGTHS

SIZE	#4		#5		#6		#8		#10	
NOM. LENGTH	L_G	L_B	L_G	L_B	L_G	L_B	L_G	L_B	L_G	L_B
3/4										
7/8										
1										
1-1/4	0.500	0.380	0.500	0.380	0.500	0.340	0.380	0.220		
1-1/2	0.500	0.380	0.500	0.380	0.500	0.340	0.380	0.220	0.620	0.420
1-3/4	1.000	0.880	1.000	0.880	1.000	0.840	0.880	0.720	0.620	0.420
2	1.000	0.880	1.000	0.880	1.000	0.840	0.880	0.720	1.120	0.920
2-1/4	1.500	1.380	1.500	1.380	1.500	1.340	1.380	1.220	1.120	0.920
2-1/2					1.500	1.340	1.380	1.220	1.620	1.420
2-3/4					2.000	1.840	1.880	1.720	1.620	1.420
3							1.880	1.720	2.120	1.920
3-1/4							2.380	2.222	2.120	1.920
3-1/2									2.620	2.420
3-3/4									2.620	2.420
4									3.120	2.920

BODY AND GRIP LENGTHS

SIZE	1/4		5/16		3/8		1/2		5/8		3/4		7/8		1	
NOM. LENGTH	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
1-3/4	0.750	0.500														
2	0.750	0.500	0.880	0.600												
2-1/4	1.250	1.00	0.880	0.600	1.000	0.690										
2-1/2	1.250	1.000	1.380	1.100	1.000	0.690	1.000	0.620								
2-3/4	1.750	1.500	1.380	1.100	1.500	1.190	1.000	0.620								
3	1.750	1.500	1.880	1.600	1.500	1.190	1.000	0.620								
3-1/4	2.250	2.000	1.880	1.600	2.000	1.690	1.750	1.360	1.500	1.040						
3-1/2	2.250	2.000	2.380	2.100	2.000	1.690	1.750	1.360	1.500	1.040	1.500	1.000				
3-3/4	2.750	2.500	2.380	2.100	2.500	2.190	1.750	1.360	1.500	1.040	1.500	1.000	1.500	0.940		
4	2.750	2.500	2.880	2.600	2.500	2.190	2.500	2.120	2.250	1.800	1.500	1.000	1.500	0.940	1.500	0.880
4-1/4	3.250	3.000	2.880	2.600	3.000	2.690	2.500	2.120	2.250	1.800	1.500	1.000	1.500	0.940	1.500	0.880
4-1/2	3.250	3.000	3.380	3.100	3.000	2.690	2.500	2.120	2.250	1.800	2.500	2.000	1.500	0.940	1.500	0.880
4-3/4	3.750	3.500	3.380	3.100	3.500	3.190	3.250	2.860	3.000	2.540	2.500	2.000	2.500	1.940	1.500	0.880
5	3.750	3.500	3.880	3.600	3.500	3.190	3.250	2.860	3.000	2.540	2.500	2.000	2.500	1.940	2.500	1.880
5-1/4	4.250	4.000	3.880	3.600	4.000	3.690	3.250	2.860	3.000	2.540	2.500	2.000	2.500	1.940	2.500	1.880
5-1/2			4.380	4.100	4.000	3.690	4.000	3.620	3.750	3.300	3.500	3.000	2.500	1.940	2.500	1.880
5-3/4			4.380	4.100	4.500	4.190	4.000	3.620	3.750	3.300	3.500	3.000	3.500	2.940	2.500	1.880
6			4.880	4.600	4.500	4.190	4.000	3.620	3.750	3.300	3.500	3.000	3.500	2.940	3.500	2.880
6-1/4			4.880	4.600	5.000	4.690	4.750	4.360	4.500	4.040	3.500	3.000	3.500	2.940	3.500	2.880
6-1/2			5.380	5.100	5.000	4.690	4.750	4.360	4.500	4.040	4.500	4.000	3.500	2.940	3.500	2.880
6-3/4					5.500	5.190	4.750	4.360	4.500	4.040	4.500	4.000	4.500	3.940	3.500	2.880
7					5.500	5.190	5.500	5.120	5.250	4.800	4.500	4.000	4.500	3.940	4.500	3.880
7-1/4					6.000	5.690	5.500	5.120	5.250	4.800	4.500	4.000	4.500	3.940	4.500	3.880
7-1/2					6.000	5.690	5.500	5.120	5.250	4.800	5.500	5.000	4.500	3.940	4.500	3.880
7-3/4					6.500	6.190	6.250	5.860	6.000	5.540	5.500	5.000	5.500	4.940	4.500	3.880
8							6.250	5.860	6.000	5.540	5.500	5.000	5.500	4.940	5.500	4.880
8-1/2							7.000	6.620	6.750	6.300	6.500	6.000	5.500	4.940	5.500	4.880
9							7.000	6.620	6.750	6.300	6.500	6.000	6.750	6.190	6.500	5.880
9-1/2							8.000	7.620	7.750	7.300	7.500	7.000	6.750	6.190	6.500	5.880
10							8.000	7.620	7.750	7.300	7.500	7.000	7.750	7.190	7.500	6.880
11									9.250	8.800	9.000	8.500	8.750	8.190	8.500	7.880
12									10.250	9.800	10.000	9.500	9.750	9.190	9.500	8.880
13											11.000	10.500	10.750	10.190	10.500	9.880
14											12.000	11.500	11.750	11.190	11.500	10.880
15											13.000	12.500	12.750	12.190	12.500	11.880
16													13.750	13.190	13.500	12.880
17													14.750	14.190	14.500	13.880
18													15.750	15.190	15.500	14.880
19															16.500	15.880
20															17.500	16.880

THREAD LENGTH FOR SIZES UP TO AND INCLUDING 1" DIAMETER SHALL BE CONTROLLED BY THE GRIP LENGTH AND BODY LENGTH AS SHOWN IN TABLE III. SEE NOTE (a) ON SHEET 1 AS REFERENCE.

SIZES LARGER THAN 1" DIAMETER AND SCREWS OF LONGER LENGTHS THAN THOSE TABULATED SHALL HAVE A MINIMUM USABLE THREAD LENGTH EQUAL TO TWO TIMES THE NOMINAL DIAMETER + .500 INCH. LENGTHS TOO SHORT TO APPLY FORMULA SHALL BE THREADED TO HEAD.

DRAWING NUMBER SPS-B-94704

ISSUE DATE 11/22/96

REVISION
(9) 10/27/03
(10) 11/04/03
(11) 10/13/04

TOLERANCES ±.010 AND ±2°
SURFACE ROUGHNESS 125√
UNLESS OTHERWISE NOTED

DRAFTED IN ACCORDANCE WITH ANSI Y14.5M 1982

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PART NUMBER:
94704( )-( )( )-( )( )