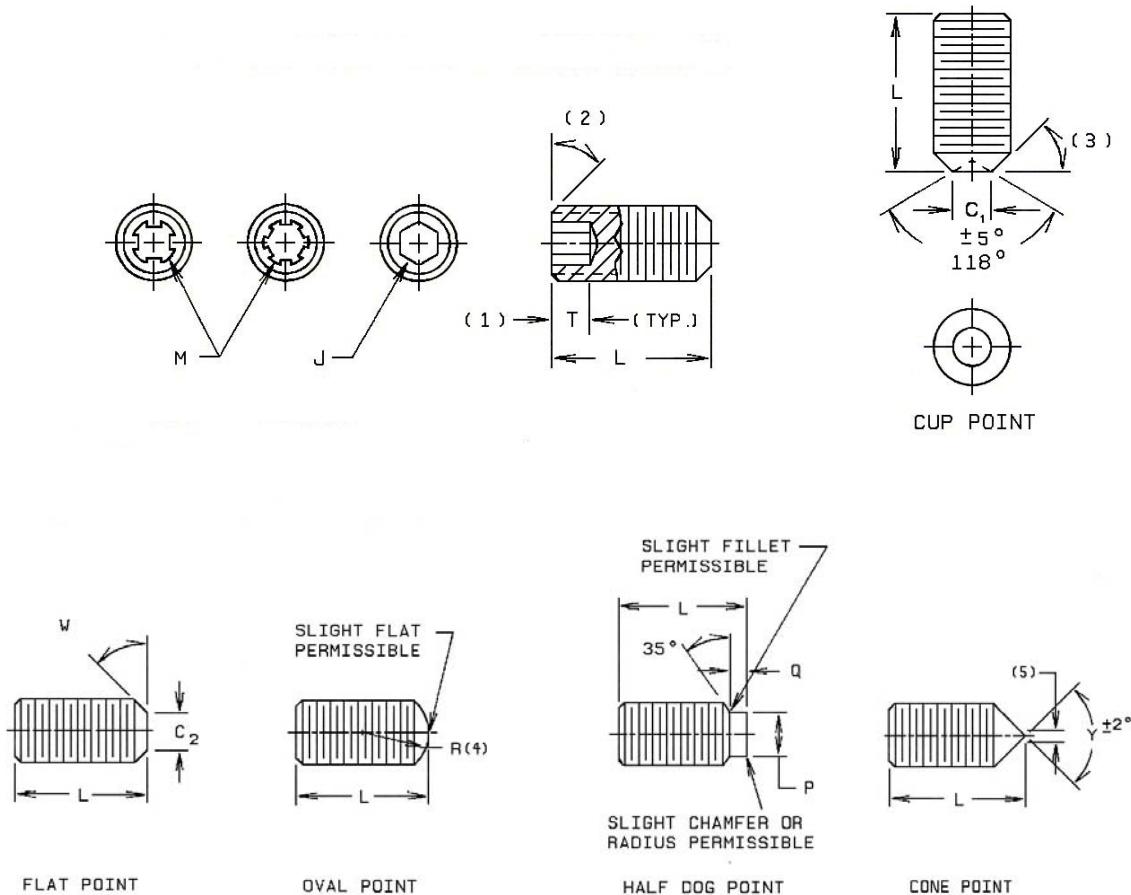
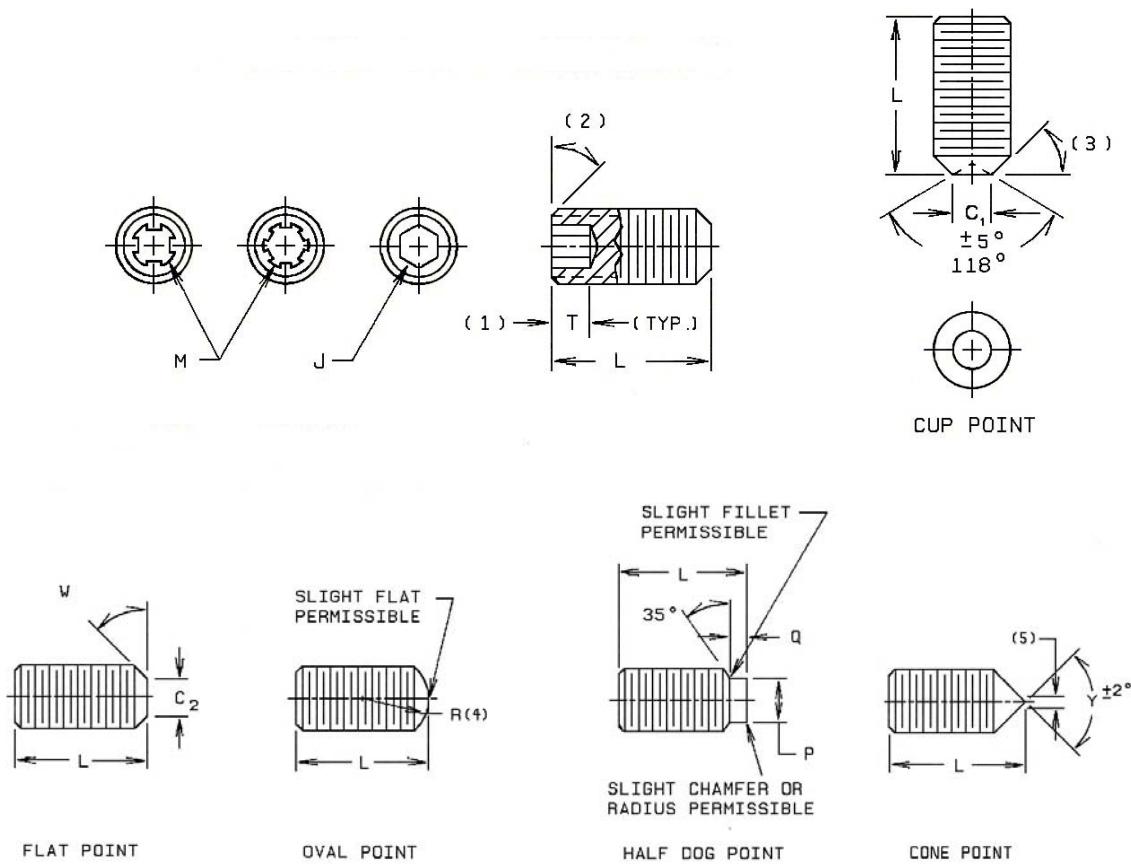


## Inch Series Socket Set Screws



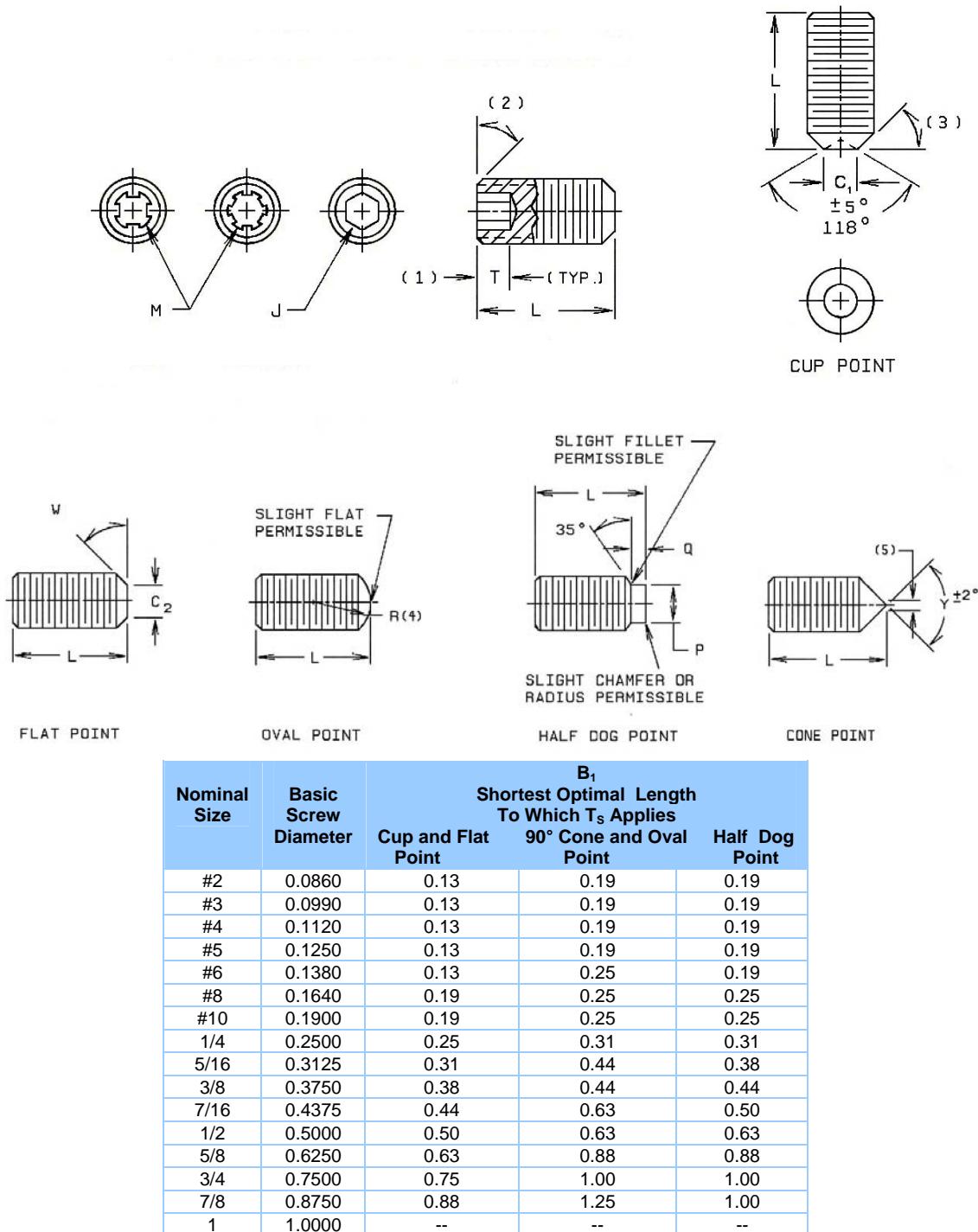
Nominal Size	Basic Screw Diameter	J Hex Socket Size	M Spline Socket Size	T Minimum Key Engagement Hex	Spline	C Cup Point Diameter	C2 Flat Point Diameter	R Oval Point Radius
#2	0.0860	0.035	0.048	0.060	0.040	0.043	0.038	0.047
#3	0.0990	0.050	0.048	0.070	0.040	0.050	0.045	0.054
#4	0.1120	0.050	0.060	0.070	0.045	0.056	0.051	0.061
#5	0.1250	1/16	0.072	0.080	0.055	0.062	0.056	0.067
#6	0.1380	1/16	0.072	0.080	0.055	0.069	0.062	0.074
#8	0.1640	5/64	0.096	0.090	0.080	0.082	0.074	0.087
#10	0.1900	3/32	0.111	0.100	0.080	0.095	0.086	0.102
1/4	0.2500	1/8	0.145	0.125	0.125	0.125	0.114	0.132
5/16	0.3125	5/32	0.183	0.156	0.156	0.156	0.144	0.172
3/8	0.3750	3/16	0.216	0.188	0.188	0.187	0.174	0.212
7/16	0.4375	7/32	0.251	0.219	0.219	0.218	0.204	0.252
1/2	0.5000	1/4	0.291	0.250	0.250	0.250	0.235	0.291
5/8	0.6250	5/16	0.372	0.312	0.312	0.312	0.295	0.371
3/4	0.7500	3/8	0.454	0.375	0.375	0.375	0.357	0.450
7/8	0.8750	7/16	0.595	0.500	0.500	0.437	0.418	0.530
1	1.0000	1/2	--	0.562	--	0.500	0.480	0.609

## Inch Series Socket Set Screws (continued)



Nominal Size	Basic Screw Diameter	Y Cone Point Angle $90^\circ \pm 2^\circ$ For these Lengths Or Longer $118^\circ \pm 2^\circ$ For Shorter	P Half Dog Point Diameter Max. Min.	Q Half Dog Point Length Max. Min.	B Shortest Optimal Length To Which $T_H$ Applies			
					Cup and Flat Point	90° Cone and Oval Point	Half Dog Point	
#2	0.0860	0.13	0.057 0.053	0.024 0.020	0.13	0.19	0.19	
#3	0.0990	0.13	0.066 0.062	0.027 0.023	0.19	0.19	0.19	
#4	0.1120	0.19	0.075 0.070	0.030 0.026	0.19	0.19	0.19	
#5	0.1250	0.19	0.083 0.078	0.033 0.027	0.19	0.19	0.19	
#6	0.1380	0.19	0.092 0.087	0.038 0.032	0.19	0.25	0.19	
#8	0.1640	0.25	0.109 0.103	0.043 0.037	0.19	0.25	0.25	
#10	0.1900	0.25	0.127 0.120	0.049 0.041	0.19	0.25	0.25	
1/4	0.2500	0.31	0.156 0.149	0.067 0.059	0.25	0.31	0.31	
5/16	0.3125	0.38	0.203 0.195	0.082 0.074	0.31	0.44	0.38	
3/8	0.3750	0.44	0.250 0.241	0.099 0.089	0.38	0.44	0.44	
7/16	0.4375	0.50	0.297 0.287	0.114 0.104	0.44	0.63	0.50	
1/2	0.5000	0.57	0.344 0.334	0.130 0.120	0.50	0.63	0.63	
5/8	0.6250	0.75	0.469 0.456	0.164 0.148	0.63	0.88	0.88	
3/4	0.7500	0.88	0.562 0.549	0.196 0.180	0.75	1.00	1.00	
7/8	0.8750	1.00	0.656 0.642	0.227 0.211	0.88	1.00	1.00	
1	1.0000	1.13	0.750 0.734	0.260 0.240	1.00	1.25	1.25	

## Inch Series Socket Set Screws (continued)



Applicable Standards: ASME B18.3 and ASTM F912.  
Hardness:  $R_C$  48-53.

## Inch Series Socket Set Screws (continued)

### Standard Length Increments

Nominal Screw Length	Standard Length Increment
1/16 through 3/16	0.03
1/8 through 1/2	0.06
1/2 through 1 inch	0.12
1 through 2 inches	0.25
2 through 6 inches	0.50
Over 6 inches long	1.00

### Length Tolerances

Nominal Screw Length	Tolerance on Length
Through 5/8 long	+/- 0.01
Over 5/8 through 2 inches	+/- 0.02
Over 2 through 6 inches	+/- 0.03
Over 6 inches long	+/- 0.06

### Notes on Inch Series Socket Set Screws

1. Key engagement dimensions shown in Columns  $T_H$  and  $T_S$  shall apply to screw lengths longer than listed in Columns B and  $B_1$ , respectively.
2. On screws longer than minimum lengths listed in Column B or  $B_1$ , the face will be chamfered between  $30^\circ$  and  $45^\circ$ . Shorter screws may or may not be chamfered.
3. The angle on the flat and cup point set screws is  $45^\circ$  plus  $5^\circ$  minus  $0^\circ$  for screws longer or equal to in length those listed in Columns B and  $B_1$  and  $30^\circ$  minimum for shorter screws.
4. The oval point radius tolerance is +0.015 inches for sizes through #5 and 0.031 inches for sizes #6 diameter and greater.
5. The apex of the cone may be flattened or rounded to as much as 10 percent of the basic screw diameter.

## Inch Series Socket Set Screws (continued)

**Hex Key Engagement for Short Length Screws**

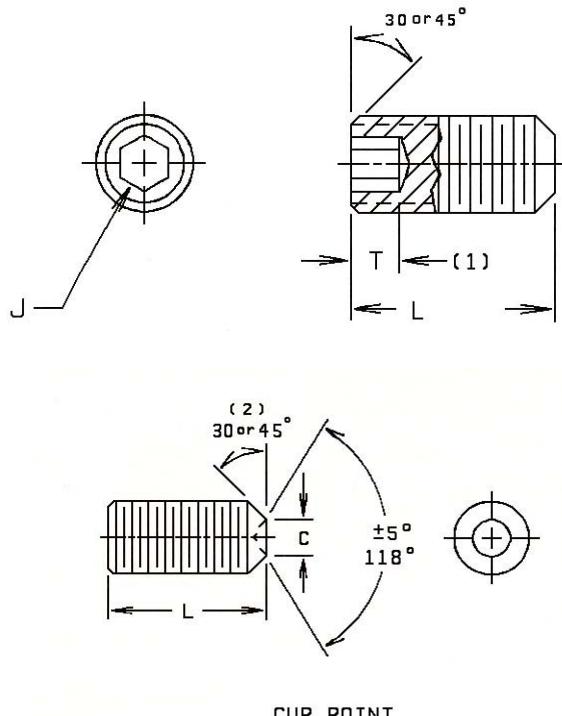
Nominal Size	Basic Screw Diameter	J Hex Socket Size	L Nominal Screw Lengths	$T_H$ Minimum Key Engagement			Half Dog Point
				Cup 3 and Flat Points	118° Cone and Oval Points		
#2	0.0860	0.035	0.06 0.09	0.030 0.040	0.029 0.040	--- <sub>2</sub> 0.035	
#3	0.0990	0.050	0.09 0.13	0.040 0.055	0.039 0.040	--- <sub>2</sub> 0.045	
#4	0.1120	0.050	0.19 0.13	0.045 0.060	0.039 0.045	--- <sub>2</sub> 0.045	
#5	0.1250	1/16	0.09 0.13	0.040 0.060	0.039 0.045	--- <sub>2</sub> 0.045	
#6	0.1360	1/16	0.09 0.13 0.16	0.040 0.060 0.070	0.039 0.045 0.065	--- <sub>2</sub> 0.045 0.065	
#8	0.1640	5/64	0.13 0.16 0.19	0.060 0.070 --- <sub>1</sub>	0.050 0.060 0.065	0.045 0.060 0.065	
#10	0.1900	3/32	0.13 0.19	0.060 --- <sub>1</sub>	0.042 0.060	0.042 0.060	
1/4	0.2500	1/8	0.19 0.25	0.090 --- <sub>1</sub>	0.065 0.110	0.055 0.090	
5/16	0.3125	5/32	0.25 0.31	0.125 --- <sub>1</sub>	0.099 0.140	0.090 0.105	
3/8	0.3750	3/16	0.25 0.31 0.50	0.110 0.140 --- <sub>1</sub>	0.090 0.115 0.165	0.075 0.105 0.155	
7/16	0.4375	7/32	0.38 0.44	0.160 --- <sub>1</sub>	0.125 0.160	0.125 0.160	
1/2	0.5000	1/4	0.38 0.44 0.50	0.175 0.215 --- <sub>1</sub>	0.130 0.155 0.195	0.130 0.155 0.195	
5/8	0.6250	5/16	0.50	0.205	0.145	0.145	
3/4	0.7500	3/8	0.63 0.75	0.255 --- <sub>1</sub>	0.190 0.325	0.190 0.295	
7/8	0.8750	1/2	0.75 0.87	0.330 --- <sub>1</sub>	0.255 0.419	0.225 0.330	
1	1.0000	9/16	0.75 0.85 1.00	0.280 0.380 --- <sub>1</sub>	0.175 0.280 0.380	0.175 0.280 0.380	

**The use of short length set screws shown in the above table may result in failure of the hex key or mating threads because the key engagement is less than optimal.**

Notes:

1. These products are included in the previous tables in this section.
2. These sizes cannot be manufactured due to point configuration and short length.
3. Cup Angle may be 118° or 130° +/- 5°, depending on manufacturing process and screw length.

## Metric Cup Point Socket Set Screws



Nominal Size	J Hex Socket Size	T Minimum Key Engagement Note 1	C Cup Point Diameter
			Max. Min.
M2x0.4	0.9	0.6-1.5	1.00 1.25
M2.5x0.45	1.3	0.7-1.8	1.25 1.05
M3x0.5	1.5	0.6-2.1	1.50 1.28
M4x0.7	2.0	1.0-2.3	2.00 1.75
M5x0.8	2.5	1.2-2.7	2.50 2.22
M6x1.0	3.0	1.8-3.0	3.00 2.75
M8x1.25	4.0	1.8-4.0	4.00 3.65
M10x1.50	5.0	2.0-5.0	5.00 4.60
M12x1.75	6.0	3.0-6.0	6.00 5.57
M16x2.0	8.0	3.0-8.0	8.00 7.50
M20x2.5	10.0	6.0-10.0	10.00 9.44
M24x3.0	12.0	5.0-12.0	12.00 11.39

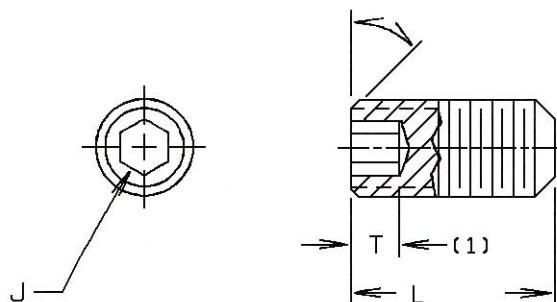
Applicable Specifications: ASME B18.3.6M and ASTM F912M

Note 1: Depth of socket is dependent on screw length. See chart on next page

Note 2: The point angle shall be  $45^\circ \pm 5^\circ$  for screws equal to or longer than the screw diameter, and a minimum  $30^\circ$  for screws shorter in length than diameter.

## Metric Cup Point Socket Set Screws (continued)

### Minimum Hex Key Engagement



Nominal Screw Diameter	Minimum Key Engagement													
	1.5	2	2.5	3	4	5	6	8	10	12	16	20	25	30
M2x0.4	0.6	0.8	1.0	1.2	1.5									
M2.5x0.45		0.7	1.1	1.5	1.8									
M3x0.5		0.6	1.1	1.5	2.1	2.1								
M4x0.7			1.0	1.3	1.8	2.3	2.3							
M5x0.8				1.2	2.0	2.7	2.7	2.7						
M6x1.0					1.8	2.5	3.0	3.0						
M8x1.25						1.8	2.5	4.0	4.0					
M10x1.50							2.0	3.6	5.0	5.0				
M12x1.75								3.0	4.5	6.0	6.0			
M16x2.0									3.0	4.8	8.0	8.0		
M20x2.5										---	6.0	9.0	12.0	
M24x3.0											5.0	8.0	12.0	12.0