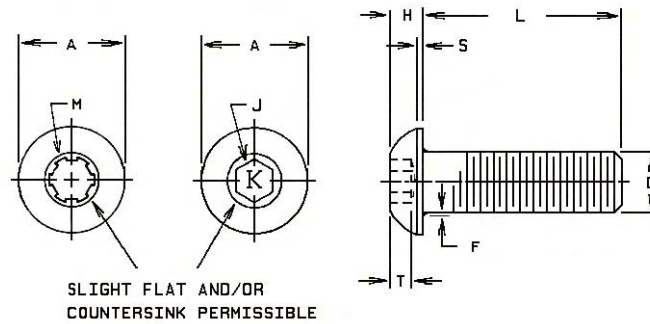


Inch Series Button Head Socket Cap Screws



Nominal Size	D Basic Screw Diameter	A Head Diameter Max. Min.	H Head Height Max. Min.	S Head Side Height Ref.	M Spline Socket Size Nominal	J Hexagon Socket Size Nominal	T Key Engagement Min.
#2	0.0860	0.164 0.154	0.046 0.038	0.010	0.060	0.050	0.028
#3	0.0990	0.188 0.176	0.052 0.044	0.010	0.072	1/16 0.062	0.035
#4	0.1120	0.213 0.201	0.059 0.051	0.015	0.072	1/16 0.062	0.035
#5	0.1250	0.238 0.226	0.066 0.058	0.015	0.096	5/64 0.078	0.044
#6	0.1380	0.262 0.250	0.073 0.063	0.015	0.096	5/64 0.078	0.044
#8	0.1640	0.312 0.298	0.087 0.077	0.015	0.111	3/32 0.094	0.052
#10	0.1900	0.361 0.347	0.101 0.091	0.020	0.145	1/8 0.125	0.070
1/4	0.2500	0.437 0.419	0.132 0.122	0.031	0.183	5/32 0.156	0.087
5/16	0.3125	0.547 0.527	0.166 0.152	0.031	0.216	3/16 0.188	0.094
3/8	0.3750	0.656 0.636	0.199 0.185	0.031	0.251	7/32 0.219	0.122
1/2	0.5000	0.875 0.851	0.265 0.245	0.046	0.372	5/16 0.312	0.175
5/8	0.6250	1.000 0.970	0.331 0.311	0.062	0.454	3/8 0.375	0.210

Nominal Size	F Fillet Extension Max. Min.	L Maximum Standard Length
#2	0.010 0.005	1/2
#3	0.010 0.005	1/2
#4	0.010 0.005	1/2
#5	0.010 0.005	1/2
#6	0.010 0.005	5/8
#8	0.015 0.010	3/4
#10	0.015 0.010	1
1/4	0.020 0.015	1
5/16	0.020 0.015	1
3/8	0.020 0.015	1 1/4
1/2	0.030 0.020	2
5/8	0.030 0.020	2

Applicable Standards: ASME B18.3 and ASTM F835.
Hardness: R_C 38-45. Tensile Strength: 180,000 psi min.

Inch Series Button Head Socket Cap Screws (continued)

Standard Screw Length Increments

<u>Nominal Screw Length</u>	<u>Standard Length Increment</u>
1/8 through 1/4	1/16
1/4 through 1 inch	1/8
1 through 2 inches long	1/4

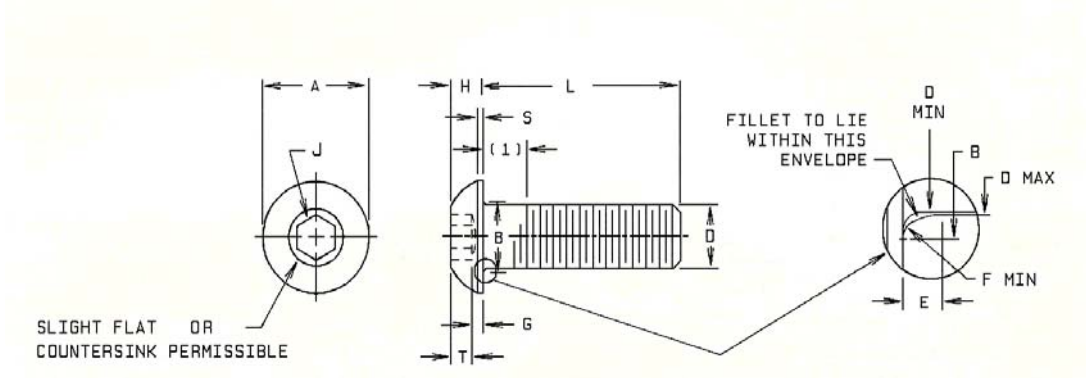
Length Tolerances

Nominal Screw Size Nominal Length	#2 through 3/8 Tolerance on Length	1/2 and 5/8
#2 through 1 inch	-0.03	-0.03
Over 1 through 2 1/2 inch	-0.04	-0.06

Mechanical Properties and Tightening Torques

Nominal Size	Basic Screw Diameter	Tensile Strength Pounds Min.	Shear Strength Thread Section Pounds Min.	Tightening Torque Inch Pounds
#4	0.1120	880	620	8
#5	0.1250	--	--	--
#6	0.1380	1320	940	15
#8	0.1640	2030	1450	30
#10	0.1900	2540	1810	65
1/4	0.2500	4610	3300	125
5/16	0.3125	7600	5430	200
3/8	0.3750	11200	8040	360
7/16	0.4375	15400	11000	600
1/2	0.5000	20600	14700	1200
5/8	0.6250	30500	23400	2000
3/4	0.7500	49500	34600	4000
7/8	0.8750	62400	47900	6000
1	1.0000	81800	62850	8500

Metric Button Head Socket Cap Screws-Property Class 12.9



Nominal Size	A Head Diameter Max. Min.		H Head Height Max. Min.		S Head Side Height Ref.	J Hexagon Socket Size Nominal	T Key Engagement Min.
M3x0.5	5.70	5.40	1.65	1.43	0.38	2.0	1.04
M4x0.7	7.60	7.24	2.20	1.95	0.38	2.5	1.30
M5x0.8	9.50	9.14	2.75	2.50	0.50	3.0	1.56
M6x1.0	10.50	10.07	3.30	3.00	0.80	4.0	2.08
M8x1.25	14.00	13.57	4.40	4.05	0.80	5.0	2.60
M10x1.50	17.50	17.07	5.50	5.20	0.80	6.0	3.12
M12x1.75	21.00	20.48	6.60	6.24	0.80	8.0	4.16
M16x2.0	28.00	27.48	8.80	8.44	1.00	10.0	5.20

Nominal Size	G Wall Thickness Min.	B Transition Diameter Max. Min.		E Fillet Transition Length Max.	F Fillet Junctionure Radius Min.	L Maximum Standard Length
M3x0.5	0.20	3.6	3.2	0.51	0.10	12
M4x0.7	0.30	4.7	4.4	0.60	0.20	20
M5x0.8	0.38	5.7	5.4	0.60	0.20	30
M6x1.0	0.74	6.8	6.5	0.68	0.25	30
M8x1.25	1.05	9.2	8.8	1.02	0.40	40
M10x1.50	1.45	11.2	10.8	1.02	0.40	40
M12x1.75	1.63	14.2	13.2	1.87	0.60	60
M16x2.0	2.25	18.2	17.2	1.87	0.60	60

Applicable Standards: ASME B18.3.4M and ASTM F835M.

Hardness: R_C 38-45. **Tensile Strength:** 1220 MPa min.

Note: Screws of nominal length shorter than those listed in Column L will be threaded to the head.

Metric Button Head Socket Cap Screws-Property Class 12.9 (continued)

Mechanical Properties and Tightening Torques

Nominal Size	Tensile Strength kN Min.	Shear Strength Thread Section kN Min.	Tightening Torque Nm Max.
M3x0.5	4.93	3.81	1.25
M4x0.7	8.60	6.65	2.9
M5x0.8	13.9	10.7	5.9
M6x1.0	19.7	15.2	10
M8x1.25	35.9	27.7	24
M10x1.50	56.8	43.9	48
M12x1.75	82.6	63.9	84
M16x2.0	155.0	119.0	207

