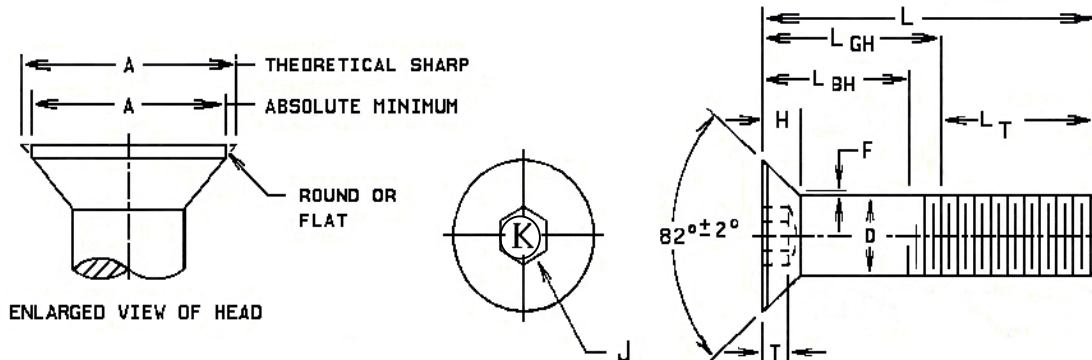


Inch Series Flat Socket Head Cap Screws



Nominal Size	Basic Screw Diameter	D Body Diameter		A Head Diameter		H Head Height Ref. Flushness Tolerance		M Spline Socket Size Nom.	J Hexagon Socket Size Nom.	
		Min.	Max.	Max. Theo-retical Sharp	Absolute Min.					
#2	0.0860	0.0860	0.0822	0.197	0.168	0.064	0.008	0.060	0.050	
#3	0.0990	0.0990	0.0949	0.226	0.193	0.073	0.010	0.072	1/16	0.062
#4	0.1120	0.1120	0.1075	0.255	0.218	0.083	0.011	0.072	1/16	0.062
#5	0.1250	0.1250	0.1202	0.281	0.240	0.090	0.012	0.096	5/64	0.078
#6	0.1380	0.1380	0.1329	0.307	0.263	0.097	0.013	0.096	5/64	0.078
#8	0.1640	0.1640	0.1585	0.359	0.311	0.112	0.014	0.111	3/32	0.094
#10	0.1900	0.1900	0.1840	0.411	0.359	0.127	0.015	0.145	1/8	0.125
1/4	0.2500	0.2500	0.2435	0.531	0.480	0.161	0.016	0.183	5/32	0.156
5/16	0.3125	0.3125	0.3053	0.656	0.600	0.198	0.017	0.216	3/16	0.188
3/8	0.3750	0.3750	0.3678	0.781	0.720	0.234	0.018	0.251	7/32	0.219
7/16	0.4375	0.4375	0.4294	0.844	0.781	0.234	0.018	0.291	1/4	0.250
1/2	0.5000	0.5000	0.4919	0.938	0.872	0.251	0.018	0.372	5/16	0.312
5/8	0.6250	0.6250	0.6163	1.188	1.112	0.324	0.022	0.454	3/8	0.375
3/4	0.7500	0.7500	0.7406	1.438	1.355	0.396	0.024	0.454	1/2	0.500
7/8	0.8750	0.8750	0.8647	1.688	1.604	0.468	0.025	--	9/16	0.562
1	1.0000	1.0000	0.9886	1.938	1.841	0.540	0.028	--	5/8	0.625

Nominal Size	Basic Screw Diameter	T Key Engagement Min.	F Fillet Extension Above D Max.
#2	0.0860	0.038	0.010
#3	0.0990	0.044	0.010
#4	0.1120	0.055	0.012
#5	0.1250	0.061	0.014
#6	0.1380	0.066	0.015
#8	0.1640	0.076	0.015
#10	0.1900	0.087	0.015
1/4	0.2500	0.111	0.015
5/16	0.3125	0.135	0.015
3/8	0.3750	0.159	0.015
7/16	0.4375	0.159	0.015
1/2	0.5000	0.172	0.015
5/8	0.6250	0.220	0.015
3/4	0.7500	0.220	0.015
7/8	0.8750	0.248	0.015
1	1.0000	0.297	0.015

Inch Series Flat Socket Head Cap Screws (continued)

Standard Length Increments

<u>Nominal Screw Diameter</u>	<u>Nominal Screw Length</u>	<u>Standard Length Increment</u>
#2 through 1 inch	1/8 to 1/4	1/16
	1/4 to 1 inch	1/8
	1 inch to 3 1/2 inches	1/4
	3 1/2 to 7 inches	1/2
	Over 7 inches long	1 inch

Length Tolerances

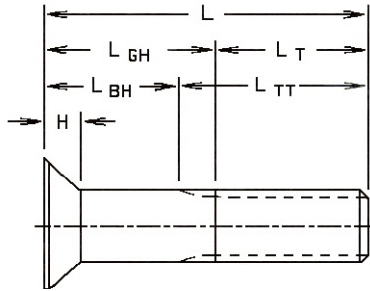
<u>Nominal Screw Diameter</u>	<u>Nominal Screw Length</u>	<u>Length Tolerance</u>
#2 through 3/8 inch	through 1 inch long	-0.03
	Over 1 through 2 1/2 long	-0.04
	Over 2 1/2 through 6 long	-0.06
	Over 6 inches long	-0.12
7/16 through 3/4 inch	through 1 inch long	-0.03
	Over 1 through 2 1/2 long	-0.06
	Over 2 1/2 through 6 long	-0.08
	Over 6 inches long	-0.12
7/8 and larger diameter	through 1 inch long	-0.05
	Over 1 through 2 1/2 long	-0.10
	Over 2 1/2 through 6 long	-0.14
	Over 6 inches long	-0.20

The length of a flat socket head cap screw is measured from the top of the head to the flat of the point unlike other socket products whose length measurement is from underneath the head to the flat of the point.

Applicable Standards: ASME B18.3 and ASTM F835.

Hardness: R_C 39-44. Tensile Strength: 145,000 psi minimum 1/2 inch diameter and smaller. Hardness R_C 37-44, tensile strength 135,000 psi minimum over 1/2 inch diameter. Tensile Strength is for full size product. Specimen strength is 180,000 psi 1/2 inch and smaller, 170,000 psi over 1/2 inch diameter.

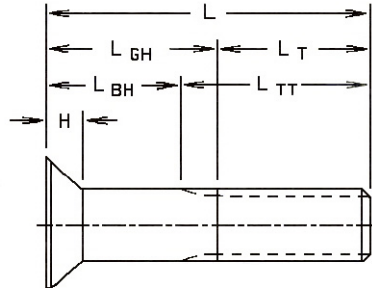
Inch Series Flat Socket Head Cap Screws (continued)



Body and Grip Lengths

Nominal Size	#2	#3	#4	#5	#6	#8	#10
Nominal Length	LGH LBH	LGH LBH	LGH LBH	LGH LBH	LGH LBH	LGH LBH	LGH LBH
3/4							
7/8	0.25 0.16	0.25 0.15					
1	0.25 0.16	0.25 0.15					
1 1/4	0.62 0.54	0.62 0.52	0.50 0.38	0.50 0.38	0.50 0.34	0.38 0.22	
1 1/2	0.88 0.79	0.88 0.77	0.50 0.38	0.50 0.38	0.50 0.34	0.38 0.22	0.62 0.42
1 3/4	--	1.12 1.02	1.00 0.88	1.00 0.88	1.00 0.84	0.88 0.72	1.62 0.42
2	--	1.38 1.27	1.00 0.88	1.00 0.88	1.00 0.84	0.88 0.72	1.12 0.92
2 1/4	--	--	1.50 1.38	1.50 1.38	1.50 1.34	1.38 1.22	1.12 0.92
2 1/2	--	--	--	--	2.00 1.84	1.88 1.72	1.62 1.42
2 3/4	--	--	--	--	--	1.88 1.72	1.62 1.42
3	--	--	--	--	--	2.38 2.22	2.12 1.92
3 1/4	--	--	--	--	--	--	2.12 1.92
3 1/2	--	--	--	--	--	--	2.62 2.42
3 3/4	--	--	--	--	--	--	2.62 2.42
4	--	--	--	--	--	--	3.12 2.92

Inch Series Flat Socket Head Cap Screws (continued)
Body and Grip Lengths (continued)



Nominal Size	1/4		5/16		3/8		7/16		1/2		5/8		3/4		7/8		1	
Nominal Length	LGH	LBH	LGH	LBH	LGH	LBH	LGH	LBH	LGH	LBH	LGH	LBH	LGH	LBH	LGH	LBH	LGH	LBH
1 3/4	0.75	0.50																
2	0.75	0.50	0.88	0.60														
2 1/4	1.25	1.00	1.38	1.10	1.00	0.69												
2 1/2	1.25	1.00	1.38	1.10	1.00	0.69	1.12	0.77	1.00	0.62								
2 3/4	1.75	1.50	1.38	1.10	1.50	1.19	1.12	0.77	1.00	0.62								
3	1.75	1.50	1.88	1.60	1.50	1.19	1.62	1.27	1.00	0.62								
3 1/4	2.25	2.00	1.88	1.60	2.00	1.69	1.62	1.27	1.75	1.36	1.50	1.04						
3 1/2	2.25	2.00	2.38	2.10	2.00	1.69	2.12	1.77	1.75	1.36	1.50	1.04	1.50	1.00				
3 3/4	2.75	2.50	2.38	2.10	2.50	2.19	2.12	1.77	1.75	1.36	1.50	1.04	1.50	1.00	1.50	0.94		
4	2.75	2.50	2.88	2.60	2.50	2.19	2.62	2.27	2.50	2.12	2.25	1.80	1.50	1.00	1.50	0.94	1.50	0.88
4 1/4	3.25	3.00	2.88	2.60	3.00	2.69	3.12	2.77	2.50	2.12	2.25	1.80	1.50	1.00	1.50	0.94	1.50	0.88
4 1/2	3.25	3.00	3.38	3.10	3.00	2.69	3.12	2.77	2.50	2.12	2.25	1.80	2.50	2.00	1.50	0.94	1.50	0.88
4 3/4	3.75	3.50	3.38	3.10	3.50	3.19	3.12	2.77	3.25	2.86	3.00	2.54	2.50	2.00	2.50	1.94	1.50	0.88
5	3.75	3.50	3.88	3.60	3.50	3.19	3.62	3.27	3.25	2.86	3.00	2.54	2.50	2.00	2.50	1.94	2.50	1.88
5 1/4	4.25	4.00	3.88	3.30	4.00	3.69	3.62	3.27	3.25	2.86	3.00	2.54	2.50	2.00	2.50	1.94	2.50	1.88
5 1/2			4.38	4.10	4.00	3.69	4.12	3.77	4.00	3.62	3.75	3.30	3.50	3.00	2.50	1.94	2.50	1.88
5 3/4			4.38	4.10	4.50	4.19	4.12	3.77	4.00	3.62	3.75	3.30	3.50	3.00	3.50	2.94	2.50	1.88
6			4.88	4.60	4.50	4.19	4.62	4.27	4.00	3.62	3.75	3.30	3.50	3.00	3.50	2.94	3.50	2.88

Thread Lengths for Sizes Beyond Listed in Above Table

Nominal Size	LT Thread Length Min.	LTT Total Thread Length Max.	Nominal Size	LT Thread Length Min.	LTT Total Thread Length Max.
#2	0.62	0.80	7/16	1.38	2.17
#3	0.62	0.83	1/2	1.50	2.38
#4	0.75	0.99	5/8	1.75	2.82
#5	0.75	1.00	3/4	2.00	3.25
#6	0.75	1.05	7/8	2.25	3.69
#8	0.88	1.19	1	2.50	4.12
#10	0.88	1.27			
1/4	1.00	1.50			
5/16	1.12	1.71			
3/8	1.25	1.94			

Inch Series Flat Socket Head Cap Screws (continued)

Mechanical Properties and Tightening Torques

Nominal Size	Basic Screw Diameter	Tensile Strength Pounds Min.	Shear Strength Pounds Min.		Tightening Torque Inch Pounds
			Body Section	Thread Section	
#4	0.1120	880	1100	620	9.5
#5	0.1250	1150	1370	820	14
#6	0.1360	1320	1670	940	18
#8	0.1640	2030	2360	1450	32
#10	0.1900	2540	3180	1810	75
1/4	0.2500	4610	5500	3300	140
5/16	0.3125	7600	8590	5430	245
3/8	0.3750	11200	12350	8040	400
7/16	0.4375	15400	16800	11000	600
1/2	0.5000	20600	22000	14700	1200
5/8	0.6250	30500	34350	23400	2000
3/4	0.7500	45100	49500	34600	4000
7/8	0.8750	62400	61000	47900	6000
1	1.000	81800	80100	62850	8500

