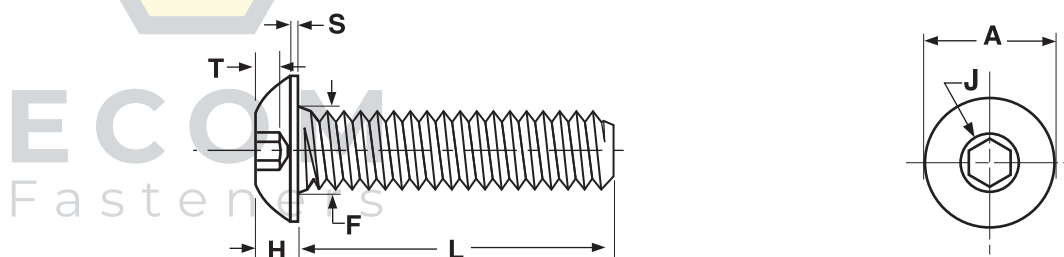


**Alloy Steel**

**BUTTON HEAD CAP SCREWS**



SOCKET BUTTON HEAD CAP SCREWS - ALLOY STEEL													ASME B18.3-2012, Blue Devil®	
Nominal Size	A		H		S	J	T	F		L	Tensile Test Load	Single Shear Strength of Body	Seating Torques in./lbs.	
	Head Diameter	Head Height	Head Side Height	Hex Socket Size	Key Engagement	Fillet Transition Diameter	Max Standard Length	Max	Min	Nom			Lb.	Lbs., Min.
	Max	Min	Max	Min	Ref	Nom	Min	Max	Min	Nom				
4	0.213	0.201	0.059	0.051	0.015	1/16	0.035	0.132	0.122	0.50	840	950	7.0	8.
6	0.262	0.250	0.073	0.063	0.015	5/64	0.044	0.158	0.148	0.63	1,260	1,400	13.	15.
8	0.312	0.298	0.087	0.077	0.015	3/32	0.052	0.194	0.184	0.75	1,940	2,000	25.	26.
10	0.361	0.347	0.101	0.091	0.020	1/8	0.070	0.220	0.210	1.00	2,440	2,700	45.	48.
1/4	0.437	0.419	0.132	0.122	0.031	5/32	0.087	0.290	0.280	1.00	4,430	4,700	95.	110.
5/16	0.547	0.527	0.166	0.152	0.031	3/16	0.105	0.353	0.343	1.00	7,300	7,300	190.	210.
3/8	0.656	0.636	0.199	0.185	0.031	7/32	0.122	0.415	0.405	1.25	10,800	10,600	300.	300.
1/2	0.875	0.851	0.265	0.245	0.046	5/16	0.175	0.560	0.540	2.00	19,800	18,800	900.	960.
5/8	1.000	0.970	0.331	0.311	0.062	3/8	0.210	0.685	0.665	2.00	31,500	29,400	1,700.	1,900.

Tolerance on Length	Nominal Screw Size	Nominal Screw Length	
		Up to 1 in., Inclusive	Over 1 in. to 2-1/2 in., Inclusive
		0 thru 3/8, Inclusive	-0.03
	1/2 and 5/8, Inclusive	-0.03	-0.06

<b>Description</b>	Has a similar thread design as a socket cap screw. The dome-shaped head is wider and has a lower profile than a socket cap screw.
<b>Applications/Advantages</b>	Used when a wider bearing surface or a smoother, more finished appearance is desired. Button head cap screws do not afford the strength of socket head cap screws and are designed for light fastening applications. They are not recommended for critical, high-strength applications.
<b>Material</b>	Screws shall be made from an alloy steel which conforms to the following chemical composition requirements (per product analysis)- <b>Carbon:</b> 0.28 to 0.50%; <b>Phosphorus:</b> 0.045% maximum; <b>Sulfur:</b> 0.035% maximum. Also, one or more of the following elements shall be present in sufficient quantity to meet the performance requirements listed below: chromium, nickel, molybdenum or vanadium.
<b>Heat Treatment</b>	Screws shall be heat treated by oil quenching from above the transformation temperature and then tempered at a temperature not lower than 650°F.
<b>Hardness</b>	<b>Thru 1/2" diam.:</b> Rockwell C39 - 44; <b>Over 1/2" diam.:</b> Rockwell C37 - 44
<b>Tensile Strength*</b>	<b>Thru 1/2" diam.:</b> 145,000 psi. minimum; <b>Over 1/2" diam.:</b> 135,000 psi. minimum
<b>Elongation</b>	8% minimum (applies to machined specimens of lengths at least 4D where D equals the nominal diameter of the screw)
<b>Reduction of Area</b>	35% minimum (applies to machined specimens)
<b>Finish</b>	Screws are supplied plain.

\* Screws must be of a length equal to or greater than 3 diameters to be subject to tensile testing.