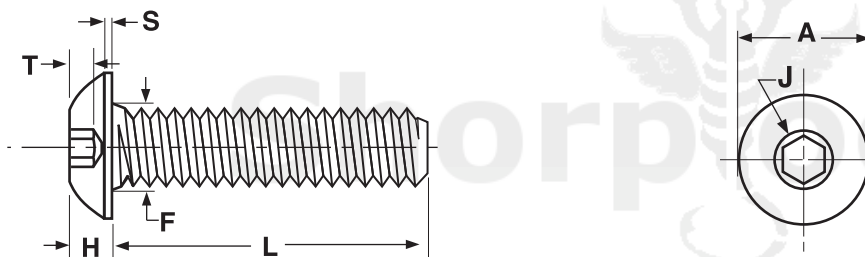


Alloy Steel

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 | Lb. | Lbs., Min. | Coarse Thread | | | Fine Thread | |
| | 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 |

| | |
|---------------------------------|---|
| Description | 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. |
| Applications/ Advantages | 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. |
| Material | Screws shall be made from an alloy steel which conforms to the following chemical composition requirements (per product analysis)- Carbon: 0.28 to 0.50%; Phosphorus: 0.045% maximum; Sulfur: 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. |
| Heat Treatment | Screws shall be heat treated by oil quenching from above the transformation temperature and then tempered at a temperature not lower than 650°F. |
| Hardness | Thru 1/2" diam.: Rockwell C39 - 44; Over 1/2" diam.: Rockwell C37 - 44 |
| Tensile Strength* | Thru 1/2" diam.: 145,000 psi. minimum; Over 1/2" diam.: 135,000 psi. minimum |
| Elongation | 8% minimum (applies to machined specimens of lengths at least 4D where D equals the nominal diameter of the screw) |
| Reduction of Area | 35% minimum (applies to machined specimens) |
| Finish | Screws are supplied plain. |

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