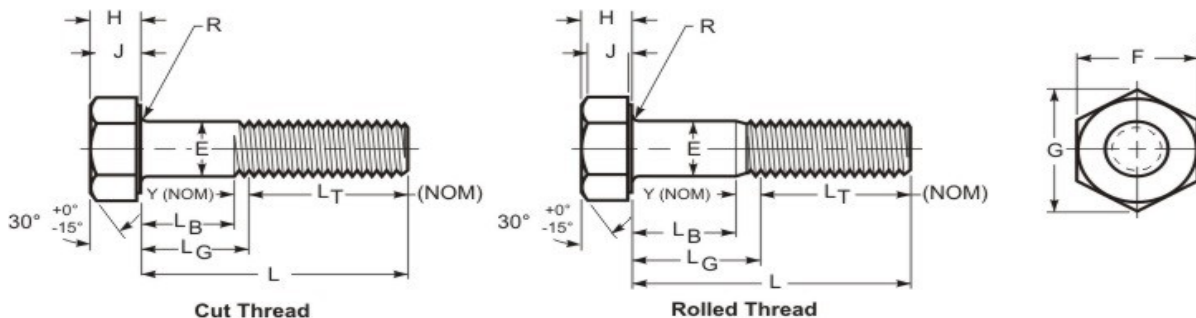


# Hex Cap Screw



GRADE MARK

THREAD DATA		
<b>Size:</b> 1/2	<b>Threads per in.:</b> 13	<b>Series Designation:</b> UNC
<b>Thread Class or Type:</b> 2A	<b>Major Diameter:</b> 0.4985 - 0.4876	<b>Pitch and Functional Dia.:</b> 0.4485 - 0.4435
<b>Tensile Stress Area:</b> 0.1419	<b>Standard:</b> ASME B1.1 - 2003 (R2008)	
DIMENSIONAL DATA		
<b>Type:</b> Hex Cap Screw	<b>Standard:</b> ASME B18.2.1-2012	<b>Nominal Diameter:</b> 0.5
<b>E - Body Diameter :</b> 0.5000 - 0.4930	<b>F - Width Across Flats:</b> 0.750 - 0.736	<b>G - Width Across Corners:</b> 0.866 - 0.840
<b>R - Fillet Radius:</b> 0.025 - 0.015	<b>H - Head Height:</b> 0.323 - 0.302	<b>J - Wrenching Height Min:</b> 0.215
<b>L<sub>T</sub> - Thread Length for Screw Length 6 in. or less:</b> 1.250	<b>Transition Thread Length - Ref.:</b> 0.385	<b>Point Type:</b> Chamfered
<b>Runout of Bearing Surface FIM:</b> 0.014 Max	<b>LG max./LB min.:</b> 1.25/0.86	<b>L - Length:</b> 2-1/2
<b>Length Tolerance:</b> -0.06		
PHYSICAL REQUIREMENTS		
<b>Nominal:</b> 0.5	<b>Standard:</b> SAE J429-2014, Grade 5	<b>Typical Materials:</b> medium carbon steel, 1028 through 1055
<b>Hardness:</b> HRC 34 - 25	<b>Proof Load (lbf):</b> 12,100	<b>Tensile Load, Min. (lbf):</b> 17,000
<b>Yield PSI, 2% Offset, Machined Specimen:</b> 92,000	<b>Tensile Strength, Min. (psi):</b> 120,000	<b>Calculated Shear Load-BODY (ref.)(lbf):</b> 10,200
<b>Calculated Shear Load-THREADS (ref.)(lbf):</b> 8,500	<b>Straightness Factor:</b> 0.015	<b>Calculated Pretension<sup>2</sup> (lbf) :</b> 9,791
<b>Tightening Torque <sup>1</sup>:</b> 90 ft.lbf, 1,077 in.lbf, 121.7 Nm		
FINISH DATA		
<b>Finish:</b> Zinc & Clear, non-hexavalent/Cr(VI) free - .0001"/ 3µm	<b>K factor (ref. DIN 946):</b> 0.22	<b>Standard:</b> ASTM F1941/F1941M-2016, Fe/Zn 3AN

<sup>1</sup> These torque values are based on K factors determined using DIN 946, tightening tension of 75% of the yield strength, and the calculation formula T=KDP. These values are advisory only. The torque for assembling critical joints should be determined and/or verified through actual experimentation by the user. The IFI is not responsible for any losses or claims resulting from the use of these values.<sup>2</sup> Calculated Pretension is equal to 75% of the bolt's yield strength achieved when using the indicated Tightening Torque.

