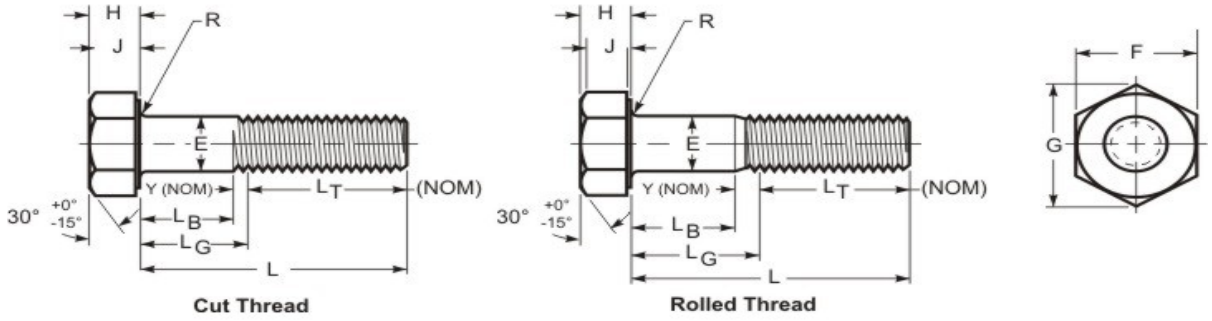
Hex Cap Screw



GRADE MARK

THREAD DATA		
Size: 1/2	**Threads per in.:** 13	**Series Designation:** UNC
Thread Class or Type: 2A	**Major Diameter:** 0.4985 - 0.4876	**Pitch and Functional Dia.:** 0.4485 - 0.4435
Tensile Stress Area: 0.1419	**Standard:** ASME B1.1 - 2003 (R2008)	
DIMENSIONAL DATA		
Type: Hex Cap Screw	**Standard:** ASME B18.2.1-2012	**Nominal Diameter:** 0.5
E - Body Diameter : 0.5000 - 0.4930	**F - Width Across Flats:** 0.750 - 0.736	**G - Width Across Corners:** 0.866 - 0.840
R - Fillet Radius: 0.025 - 0.015	**H - Head Height:** 0.323 - 0.302	**J - Wrenching Height Min:** 0.215
L_T - Thread Length for Screw Length 6 in. or less: 1.250	**Transition Thread Length - Ref.:** 0.385	**Point Type:** Chamfered
Runout of Bearing Surface FIM: 0.014 Max	**LG max./LB min.:** 0.75/0.38	**L - Length:** 2
Length Tolerance: -0.06		
PHYSICAL REQUIREMENTS		
Nominal: 0.5	**Standard:** SAE J429-2014, Grade 5	**Typical Materials:** medium carbon steel, 1028 through 1055
Hardness: HRC 34 - 25	**Proof Load (lbf):** 12,100	**Tensile Load, Min. (lbf):** 17,000
Yield PSI, 2% Offset, Machined Specimen: 92,000	**Tensile Strength, Min. (psi):** 120,000	**Calculated Shear Load-BODY (ref.)(lbf):** 10,200
Calculated Shear Load-THREADS (ref.)(lbf): 8,500	**Straightness Factor:** 0.012	**Calculated Pretension[2] (lbf) :** 9,791
Tightening Torque [1]: 90 ft.lbf, 1,077 in.lbf, 121.7 Nm		
FINISH DATA		
Finish: Zinc & Clear, non-hexavalent/Cr(VI) free - .0001"/ 3µm	**K factor (ref. DIN 946):** 0.22	**Standard:** ASTM F1941/F1941M-2016, Fe/Zn 3AN

[1] 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.[2] Calculated Pretension is equal to 75% of the bolt's yield strength achieved when using the indicated Tightening Torque.

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