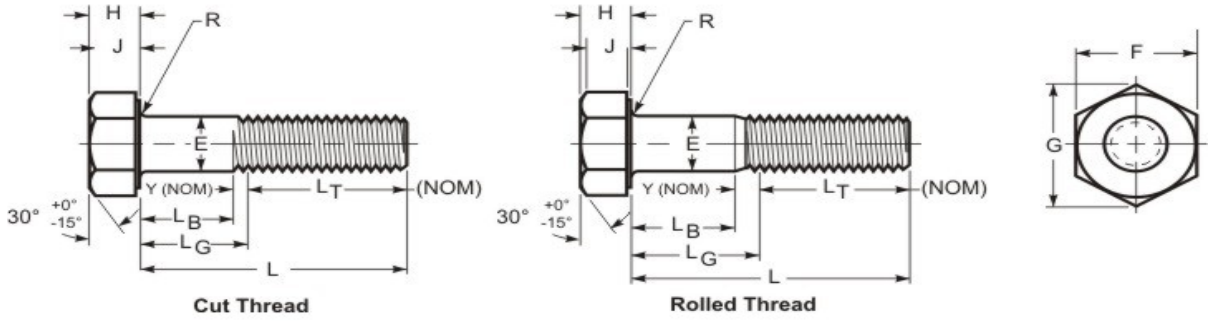
Hex Cap Screw



GRADE MARK

THREAD DATA		
Size: 1/4	**Threads per in.:** 20	**Series Designation:** UNC
Thread Class or Type: 2A	**Major Diameter:** 0.2489 - 0.2408	**Pitch and Functional Dia.:** 0.2164 - 0.2127
Tensile Stress Area: 0.0318	**Standard:** ASME B1.1 - 2003 (R2008)	
DIMENSIONAL DATA		
Type: Hex Cap Screw	**Standard:** ASME B18.2.1-2012	**Nominal Diameter:** 0.25
E - Body Diameter : 0.2500 - 0.2450	**F - Width Across Flats:** 0.438 - 0.428	**G - Width Across Corners:** 0.505 - 0.488
R - Fillet Radius: 0.025 - 0.015	**H - Head Height:** 0.163 - 0.150	**J - Wrenching Height Min:** 0.106
L_T - Thread Length for Screw Length 6 in. or less: 0.750	**Transition Thread Length - Ref.:** 0.250	**Point Type:** Chamfered
Runout of Bearing Surface FIM: 0.010 Max	**LG max./LB min.:** 0.75/0.50	**L - Length:** 1-1/2
Length Tolerance: -0.04		
PHYSICAL REQUIREMENTS		
Nominal: 0.25	**Standard:** SAE J429-2014, Grade 5	**Typical Materials:** medium carbon steel, 1028 through 1055
Hardness: HRC 34 - 25	**Proof Load (lbf):** 2,700	**Tensile Load, Min. (lbf):** 3,800
Yield PSI, 2% Offset, Machined Specimen: 92,000	**Tensile Strength, Min. (psi):** 120,000	**Calculated Shear Load-BODY (ref.)(lbf):** 2,280
Calculated Shear Load-THREADS (ref.)(lbf): 1,900	**Straightness Factor:** N/A	**Calculated Pretension[2] (lbf) :** 2,194
Tightening Torque [1]: 10 ft.lbf, 121 in.lbf, 13.6 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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