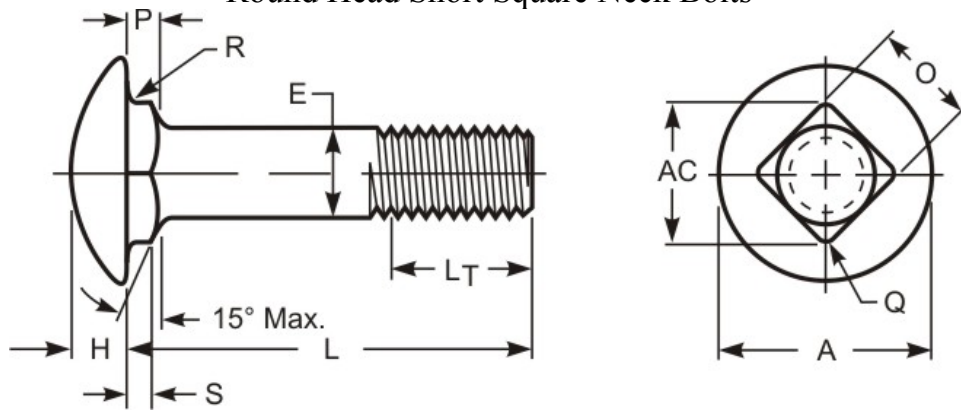


## Round Head Short Square Neck Bolts



# 307A

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 - 2019                                           |                                                        |
| DIMENSIONAL DATA                                                |                                                                      |                                                        |
| Type: Round Head Short Square Neck Bolts                        | Standard: ASME B18.5-2017                                            | Nominal Diameter: 0.25                                 |
| E - Body Diameter : 0.260 - 0.213                               | A - Head Diameter: 0.594 - 0.563                                     | R - Fillet Radius: 0.031 Max                           |
| H - Head Height: 0.145 - 0.125                                  | L <sub>T</sub> - Thread Length for Screw Length 6 in. or less: 0.750 | Point Type: Non-pointed                                |
| O - Square Width: 0.260 - 0.245                                 | P - Square Depth: 0.124 - 0.093                                      | Q - Max. Corner Radius: 0.031                          |
| AC - Minimum Square Across Corners: 0.321                       | S - Minimum Square Corner Height: 0.055                              | L - Length: 4                                          |
| Length Tolerance: +0.04/-0.06                                   |                                                                      |                                                        |
| PHYSICAL REQUIREMENTS                                           |                                                                      |                                                        |
| Nominal: 0.25                                                   | Standard: ASTM A307A-2014e1                                          | Typical Materials: low carbon steel, 1006 through 1022 |
| Hardness: HRB 69 - 100                                          | Tensile Load, Min. (lbf): 1,908                                      | Yield PSI, 2% Offset, Machined Specimen: 36,000        |
| Elongation, min. %, Machined Specimen: 18                       | Tensile Strength, Min. (psi): 60,000                                 | Calculated Shear Load-BODY (ref.)(lbf): 1,145          |
| Calculated Shear Load-THREADS (ref.)(lbf): 954                  | Straightness Factor: 0.024                                           | Calculated Pretension <sup>2</sup> (lbf) : 859         |
| Tightening Torque <sup>1</sup> : 4 ft.lbf, 47 in.lbf, 5.3 Nm    |                                                                      |                                                        |
| FINISH DATA                                                     |                                                                      |                                                        |
| Finish: Zinc & Clear, non-hexavalent/Cr(VI) free - .0001"/ 3Åµm | K factor (ref. DIN 946): 0.22                                        | Standard: 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.