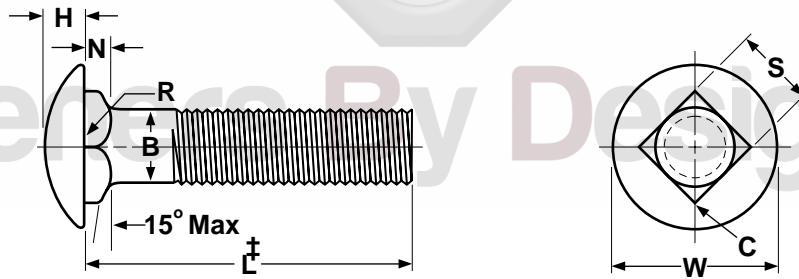


# Cap Screws & Bolts

# Carriage Bolts

# Short Neck



**CARRIAGE BOLTS, SHORT NECK**

ANSI/ASME B18.5

| Nominal Size or Basic Bolt Diameter | B             |       | W             |       | H           |       | S            |       | N            |       | C                       | R             |       |
|-------------------------------------|---------------|-------|---------------|-------|-------------|-------|--------------|-------|--------------|-------|-------------------------|---------------|-------|
|                                     | Body Diameter |       | Head Diameter |       | Head Height |       | Square Width |       | Square Depth |       | Corner Radius on Square | Fillet Radius |       |
|                                     | Max           | Min   | Max           | Min   | Max         | Min   | Max          | Min   | Max          | Min   | Max                     | Max           |       |
| 1/4                                 | 0.2500        | 0.260 | 0.213         | 0.594 | 0.563       | 0.145 | 0.125        | 0.260 | 0.245        | 0.124 | 0.093                   | 0.031         | 0.031 |
| 5/16                                | 0.3125        | 0.324 | 0.272         | 0.719 | 0.688       | 0.176 | 0.156        | 0.324 | 0.307        | 0.124 | 0.093                   | 0.031         | 0.031 |
| 3/8                                 | 0.3750        | 0.388 | 0.329         | 0.844 | 0.782       | 0.208 | 0.188        | 0.388 | 0.368        | 0.156 | 0.125                   | 0.047         | 0.031 |
| 7/16                                | 0.4375        | 0.452 | 0.385         | 0.969 | 0.907       | 0.239 | 0.219        | 0.452 | 0.431        | 0.156 | 0.125                   | 0.047         | 0.031 |
| 1/2                                 | 0.5000        | 0.515 | 0.444         | 1.094 | 1.032       | 0.270 | 0.250        | 0.515 | 0.492        | 0.156 | 0.125                   | 0.047         | 0.031 |
| 5/8                                 | 0.6250        | 0.642 | 0.559         | 1.344 | 1.219       | 0.344 | 0.313        | 0.642 | 0.616        | 0.218 | 0.187                   | 0.078         | 0.062 |
| 3/4                                 | 0.7500        | 0.768 | 0.678         | 1.594 | 1.469       | 0.406 | 0.375        | 0.768 | 0.741        | 0.218 | 0.187                   | 0.078         | 0.062 |

| Tolerance on Length | Nominal Bolt Size | Nominal Screw Length |       |                                |       |                                |       |                            |       |            |       |
|---------------------|-------------------|----------------------|-------|--------------------------------|-------|--------------------------------|-------|----------------------------|-------|------------|-------|
|                     |                   | Up to 1 in., incl.   |       | Over 1 in. to 2 1/2 in., incl. |       | Over 2 1/2 in. to 4 in., incl. |       | Over 4 in. to 6 in., incl. |       | Over 6 in. |       |
|                     | No. 10 thru 3/8   | +0.02                | -0.03 | +0.02                          | -0.04 | +0.04                          | -0.06 | +0.06                      | -0.10 | +0.10      | -0.18 |
|                     | 7/16 and 1/2      | +0.02                | -0.03 | +0.04                          | -0.05 | +0.06                          | -0.08 | +0.08                      | -0.10 | +0.12      | -0.18 |
|                     | 9/16 thru 3/4     | +0.02                | -0.03 | +0.06                          | -0.08 | +0.08                          | -0.10 | +0.10                      | -0.10 | +0.14      | -0.18 |
|                     | 7/8 and 1         | ....                 | ....  | +0.08                          | -0.10 | +0.10                          | -0.14 | +0.12                      | -0.16 | +0.16      | -0.20 |
|                     | 1-1/8 thru 1-1/2  | ....                 | ....  | +0.12                          | -0.12 | +0.16                          | -0.16 | +0.18                      | -0.18 | +0.22      | -0.22 |

‡Length of a carriage bolt is measured from the underhead bearing surface to the extreme end of the bolt.

|                         |   |
|-------------------------|---|
| Description             | A round head bolt with a short, square shoulder under the head, and a unified thread pitch. The bolt is made from low or medium carbon steel.   |
| Applications/Advantages | Carriage bolts are designed to keep the bolt from turning when a nut is being tightened. The short neck variety is used in sheet metal where a standard sized neck would create an obstruction. |
| Material                | AISI 1006 - 1050 or equivalent steel  |
| Hardness                | Rockwell B70 - 100  |
| Proof Load              | 33,000 psi.   |
| Tensile Strength        | 60,000 psi. minimum   |
| Yield Strength          | 36,000 psi. minimum   |
| Elongation              | 18% minimum   |
| Reduction of Area       | 35% minimum   |
| Minimum Thread Length   | The minimum length of thread shall be equal to twice the basic bolt diameter plus 0.25 in. for bolts 6 in. or shorter, and twice the diameter plus 0.50 in. for bolts longer than 6 in..        |
| Plating                 | See Appendix-A for plating information.   |