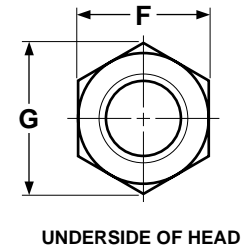
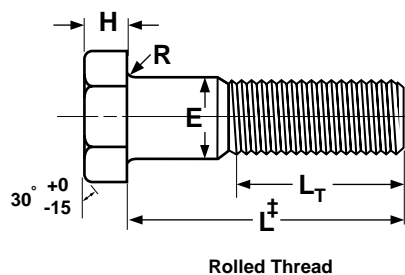
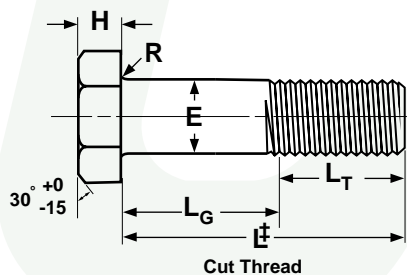


# Cap Screws & Bolts *Hot Dip Galvanized*

## Hex Machine Bolts

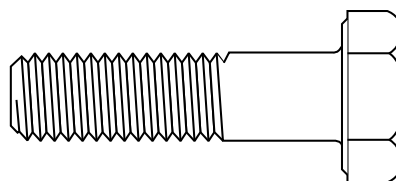
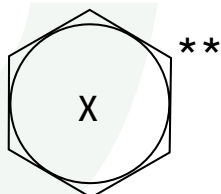


‡Length of a machine bolt is measured from the underhead bearing surface to the extreme end of the bolt.

| HEX MACHINE BOLTS              |               |       |                    |       |       |                      |       |             |       |       |                  |      |                                | ASME B18.2.1-1996 |  |
|--------------------------------|---------------|-------|--------------------|-------|-------|----------------------|-------|-------------|-------|-------|------------------|------|--------------------------------|-------------------|--|
| Nominal Size Or Basic Diameter | E             |       | F                  |       |       | G                    |       | H           |       |       | R                |      | L <sub>T</sub>                 |                   |  |
|                                | Body Diameter |       | Width Across Flats |       |       | Width Across Corners |       | Head Height |       |       | Radius of Fillet |      | Thread Length For Bolt Lengths |                   |  |
|                                | Max.          | Min.  | Basic              | Max.  | Min.  | Max.                 | Min.  | Basic       | Max.  | Min.  | Max.             | Min. | 6 in. and shorter              | over 6 in.        |  |
| 1/4 0.2500                     | 0.260         | 0.237 | 7/16               | 0.438 | 0.425 | 0.505                | 0.484 | 11/64       | 0.188 | 0.150 | 0.03             | 0.01 | 0.750                          | 1.000             |  |
| 5/16 0.3125                    | 0.324         | 0.298 | 1/2                | 0.500 | 0.484 | 0.577                | 0.552 | 7/32        | 0.235 | 0.195 | 0.03             | 0.01 | 0.875                          | 1.125             |  |
| 3/8 0.3750                     | 0.388         | 0.360 | 9/16               | 0.562 | 0.544 | 0.650                | 0.620 | 1/4         | 0.268 | 0.226 | 0.03             | 0.01 | 1.000                          | 1.250             |  |
| 1/2 0.5000                     | 0.515         | 0.482 | 3/4                | 0.750 | 0.725 | 0.866                | 0.826 | 11/32       | 0.364 | 0.302 | 0.03             | 0.01 | 1.250                          | 1.500             |  |
| 5/8 0.6250                     | 0.642         | 0.605 | 15/16              | 0.938 | 0.906 | 1.083                | 1.033 | 27/64       | 0.444 | 0.378 | 0.06             | 0.02 | 1.500                          | 1.750             |  |
| 3/4 0.7500                     | 0.768         | 0.729 | 1-1/8              | 1.125 | 1.088 | 1.299                | 1.240 | 1/2         | 0.524 | 0.455 | 0.06             | 0.02 | 1.750                          | 2.000             |  |
| 7/8 0.8750                     | 0.895         | 0.852 | 1-5/16             | 1.312 | 1.269 | 1.516                | 1.447 | 37/64       | 0.604 | 0.531 | 0.06             | 0.02 | 2.000                          | 2.250             |  |
| 1 1.0000                       | 1.022         | 0.976 | 1-1/2              | 1.500 | 1.450 | 1.732                | 1.653 | 43/64       | 0.700 | 0.591 | 0.09             | 0.03 | 2.250                          | 2.500             |  |

| Tolerance on Length | Nominal Screw 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. | Longer than 6 in. |
|                     | 1/4 to 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, -0.06                   | +0.06, -0.08                   | +0.08, -0.10               | +0.12, -0.18      |
|                     | 9/16 to 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               |                   |

Hex Machine  
Bolts**Hot Dip Galvanized Bolts & Cap Screws**

|                                     |  |
|-------------------------------------|--|
| <b>Description</b>                  | A low or medium carbon steel, externally threaded mechanical device, 1/4 inch in diameter or larger, with a trimmed hex head and a hot-dip galvanized coating. A hex bolt does not have a washer face on its bearing surface as does a hex cap screw, nor does it have a machined point. Its body tolerances are not as close as those of a cap screw. |
| <b>Applications/<br/>Advantages</b> | Designed to be used in highly corrosive environments (ie. coastal locales and heavily polluted atmospheres). May be inserted into an oversized hole and should be assembled with a nut.  |
| <b>Material</b>                     | Machine bolts shall be manufactured from steel which conforms to the following chemical composition requirements:<br><i>Phosphorus: 0.06% maximum; Sulfur: 0.15% maximum.</i>  |
| <b>Hardness</b>                     | Bolts of a length < 3X nominal diameter: Rockwell B69 - B100.<br>Bolts of a length => 3X nominal diameter: Rockwell B100 maximum.  |
| <b>Tensile Strength</b>             | 60,000 psi. minimum.   |
| <b>Elongation*</b>                  | 18% minimum (all diameters)  |
| <b>Plating</b>                      | See Appendix-A for plating information.  |

\*These properties are tested only on machined specimens when the testing machine cannot provide for full testing of the parts.

\*\*Product standards require the manufacturer's head marking to appear on the top of all bolts 1/4" diameter and larger. "X" represents one location such a marking may appear.