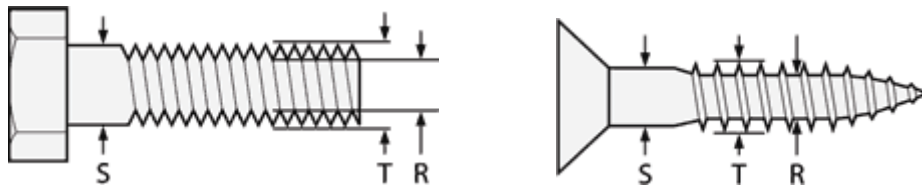


## How to Measure Fastener Diameter

There are several different locations on a fastener where one can measure the diameter.

The most commonly used diameters are:

- **Thread Diameter (T)**. Also called major diameter.
- **Shank Diameter (S)**.
- **Root Diameter (R)**. Also called minor diameter.



In some cases the head size of a hex bolt (diameter across the flats) is also used. However, due to the fact that different head sizes may be used with the same diameter bolt, this is not a reliable way to determine bolt diameter.

### Nuts and Washers

Both nuts and washers are sized by the fastener they fit. For example a 3/8 inch nut fits a 3/8 inch bolt and a 3/8 inch washer fits the same bolt.

*Note:* When purchasing nuts make sure the “threads per inch” or “thread pitch” match that of the bolt.

### Product Types

#### Hex Bolts

The diameter of a hex bolt is the Shank Diameter, expressed in inches for inch (US) bolts and in millimeters for metric bolts. Because this is approximately the same as the Major or Thread diameter the thread diameter measurement can be used for fully threaded bolts.

#### Machine Screws

Machine screws are measured in the same way as hex bolts above.

#### Socket Head Screws

Socket head screw diameter is measured in the same way as hex bolts.

#### Carriage Bolts

Carriage bolt diameter is measured in the same way as hex bolts.

**Lag Bolts**

Lag bolt diameter is measured in the same way as hex bolts.

**Wood Screws**

Wood screw diameter can be measured either as a shank diameter or a root diameter. The measurement is then cross referenced to a size number known as a wire gauge size.

**Sheet Metal Screws**

Thread diameter is used when measuring sheet metal screws. The measurement is then cross referenced to a size number known as a wire gauge size.

**Shoulder Bolts**

Only the shoulder diameter is used when measuring shoulder bolts.