Bolt Measurements

1- **Standard or Metric**- Look at the bolt head. If there are lines on it is standard, if there are numbers, it is metric.
2- **Grade**- Bolt Strength. For standard bolts, count the lines and add 2. Grade 5 is medium duty bolt, Grade 8 is heavy duty. For metric bolts, read the number. 8.8 9.8 10.9 11.9 12.9. The higher the number, the stronger the bolt.
3- **Head size**- Size of the wrench or socket that fits that bolt. Measure from Flat to Flat. Standard bolts are in fractions of an inch, metric bolts are in millimeters
4- **Bolt Length**- Measured from the bottom of the head to the bottom of the thread. Standard is in inches by ¼" increments, metric is in millimeters in 5mm increments.
5- **Bolt Size**- Is the diameter of the threads or bolt. Standard bolts are in fractions of an inch, metric bolts are in millimeters
6- **Thread Pitch** is the profile of the threads. Bolts/Nuts are either considered coarse thread or fine thread. For standard bolts we measure threads per inch. Common numbers are 14, 16, 18, 22, 24, 28, 32. For metric we have 1.00, 1.25, 1.50, 1.75, 2.0. This represents how many millimeters are between the threads (including the size of the thread).

Torque- Twisting force
Bolt Torque- How tight we tighten bolts.

Measured in ft/lbs, in/lbs, and Newton meters

Torque wrench is a calibrated instrument used to measure how tight we make nuts/bolts. When it reaches torque value, it will make a clicking sound and the head would move independently of the handle. When finished, you must set torque wrench to the LOWEST setting on the wrench or damage will occur.

When torquing in a circular pattern, you want to do a criss-cross or star shape pattern to draw parts down evenly.

When torquing in a rectangle or square, start in middle and work outwards to avoid damaging parts.