

General Information on Torque Specifications.....

The amount of torque applied to a bolt or nut determines the Clamp Load. This Clamp Load is a determining factor in the performance of the assembly. The torque applied to a fastener with an antiseize compound pre-applied to the threads will ensure uniformity through out the process but will increase the Clamp Load compared to an unlubricated bolt.

For critical applications, as determined by the Engineering Project, either the recommended torque or a torque that is unique to the application shall be clearly identified and specified on the engineering documentation.

Standard manufacturing practices for the installation and tightening of fasteners shall apply to all fasteners which do not have a specific requirement identified on the documentation. The following factors shall be considered when applying torque: cleanliness of the fastener, use of a thread sealant or lubricant, degree of lubrication on the fastener, presence of a prevailing torque feature, hardness of the surface underneath the fastener's head, or similar condition which affects the installation. As noted on available charts, torque values should be reduced by 25% for lubricated fasteners to achieve the similar stress as a dry fastener.

Torque values may also have to be reduced when the fastener is threaded into aluminum or brass. The specific torque value should be determined based on the aluminum or brass material strength, fastener size, length of thread engagement, etc.

The standard method of verifying torque shall be performed by marking a line on the fastener (head or nut) and mating part then backing off the fastener 1/4 turn. Measure the torque required to tighten the fastener until the lines match up.

- Reduce the torque values by 25% for lubricated fasteners.
- Torque may have to be reduced when installing fastener into threaded aluminum or brass. The specific torque value should be determined based on fastener size, the aluminum or brass material strength, length of thread engagement, etc.
- The nominal torque values listed for Grade 5 & 8 fasteners are based on 75%, of the minimum proof load specified.
- Hole size, material strength, material thickness & finish must be considered when determining specific torque.
- Values: Most torque values are based on non-lubricated fasteners.
- Definitions: Lubricated means coated with a lubricant such as engine oil, thread sealant or threadlocker.
- It is necessary to determine Torque coefficient (or Nut Factor) independently, for all critical applications.