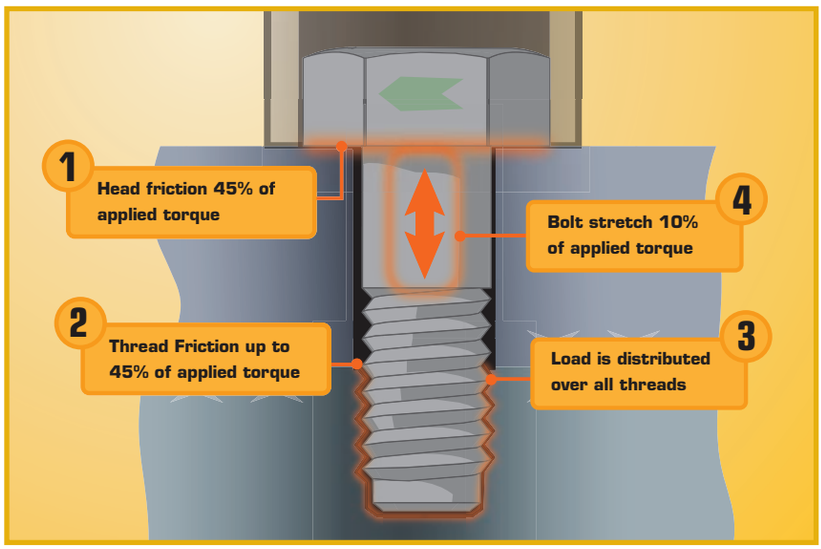
WHY IS TORQUE CRITICAL?

KNOWLEDGE IS KEY

These illustrations explain why torque instruments are critical to the application of the correct amount of load or tension to threaded fasteners. Original Equipment Manufacturers specify the amount of torque that is applied to fasteners to ensure they maintain the proper load within operating conditions.

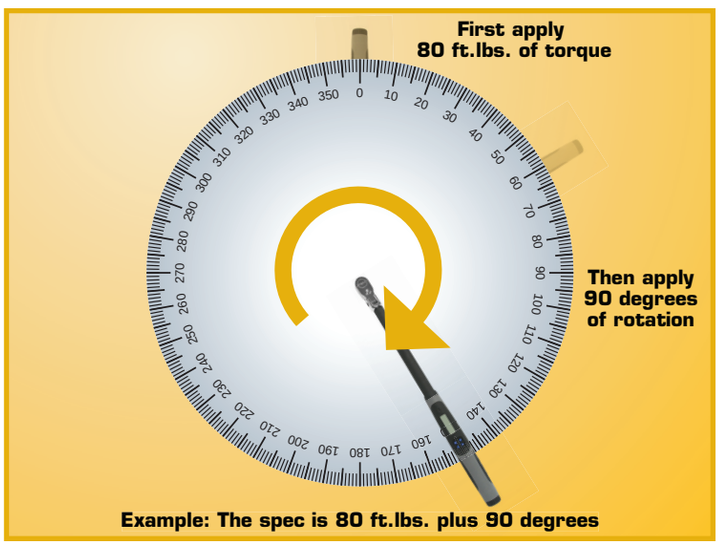


A properly torqued fastener will remain tight during all loads and vibration. A poorly torqued fastener can fail quickly from fatigue creating a potentially unsafe situation. Many technicians don't realize the importance of tightening a fastener to a specified torque value or literally what is actually occurring with the fastener while torque is being applied.

A fastener that is stretched (preloaded) to it's designed level of residual stress will resist failure for the given cycle load and the maximum number of fatigue cycles it was designed for. It will also provide maximum resistance to loosening from vibration.

A fastener installed in an under-stressed condition will loosen under load and ultimately fail by loss of clamping force. A fastener that is over tightened will fail during installation or fail prematurely during under cycle stress.

CDI Torque Products provides professional technicians the largest selection of high-quality torque tools in the market today. Whether looking for a traditional click-type wrench or something cutting edge like the Computorq 3 wrench, CDI Torque Products has all of the torque wrench, sizes and styles to fill your needs. Our products have earned a reputation for superior performance and reliability in shops and factories worldwide that deliver.



TORQUE WRENCH SAFETY

These precautions should always be taken when using any torque wrench to avoid possible injury:

- Read instruction manual completely before using torque wrench.
- Safety glasses or goggles should be worn at all times when using any hand tool.
- Always pull, DO NOT PUSH, to apply torque and adjust your stance to prevent a fall.
- A "cheater bar" should NEVER be used on a torque wrench to apply excess leverage.
- Do not use with sockets or fasteners showing wear or cracks.
- Ratchet mechanism may slip or break if dirty, mismatched or worn parts are used.
- Make sure direction lever is fully engaged

TORQUE WRENCH USAGE

- All mechanical torque wrenches are calibrated from 20% to 100% of full scale, therefore, they should never be used below or above those limits
- To determine which torque wrench capacity is best suited for an application, many factors must be considered. However, as a recommendation, use a torque wrench in the middle 50% of the overall capacity of the tool. This will result in longer tool life, ease of use for the operator and increased accuracy from "clicker" type torque wrenches
- Always grasp handle firmly in the center of the grip
- Approach final torque slowly and evenly
- Stop pulling wrench immediately when target torque is reached
- Never use a torque wrench to break fasteners loose
- Should be cleaned and stored properly
- Should always be stored at it's lowest torque setting
- Wrenches should be re-calibrated if dropped. Should never be used in excess of it's capacity
- Torque wrenches should be "exercised" a minimum of three times at 100% of full scale before use
- The wrench selected should be calibrated in the same torque units that are specified
- Use of a "cheater bar" will result in an inaccurate reading and can possibly damage the wrench
- Torque wrenches will last longer if reasonable care is taken. Always unwind handle to the lowest setting after each use. Do not attempt to lubricate the internal torque mechanism. Clean torque wrench by wiping, do not immerse. The wrench should be sent to a qualified calibration lab once every year or every 5000 cycles for re-calibration

COMMON TORQUE ABBREVIATIONS

Foot Pounds – ft. lbs.
Inch Pounds – in. lbs.
Inch Ounces – in. ozs.
Newton Meter – Nm
Centi-Newton Meter – cNm
Meter Kilogram – Mkg

EASY-TO-USE TORQUE CONVERSION TABLE

To Convert From	To	Multiply by
in. oz.	in. lb.	0.0625
in. lb.	in.oz.	16
in. lb.	ft.lb.	0.08333
in. lb.	cmkg	1.1519
in. lb.	mkg	0.011519
in. lb.	Nm	0.113
in. lb.	dNm	1.13
ft. lb.	in. lb.	12
ft. lb.	mkg	0.1382
ft. lb.	Nm	1.356
dNm	in. lb.	0.885
dNm	Nm	0.10
Nm	dNm	10
Nm	cmkg	10.2
Nm	mkg	0.102
Nm	in. lb.	8.85
Nm	ft. lb.	0.7376
cmkg	in. lb.	0.8681
cmkg	Nm	0.09807
mkg	in. lb.	86.81
mkg	ft. lb.	7.236
mkg	Nm	9.807