Torque Wrench Tips

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Most of us have a torque wrench that sees at least occasional use. The purpose of a torque wrench is to determine how much to tighten a fastener. Too tight and you'll probably break something. Too loose and it'll probably vibrate itself out. So you need to know how much is just right.

While my torque wrench is not often used on engine work, it is used at least a few times a year to check the torque of wheel lug nuts. I hope that you are checking the torque on your wheel lugs at least once a year. Spring, when the car comes out of storage, is a good time. If you are replacing wheels, it won't hurt to check them again after driving 50 miles or so.

Here are some tips and ideas from various sources on the care and use of a torque wrench. Most of the care ideas refer to the "click-type" wrench, because that is what I have. The methods of fastening and fastner use can be applied to the click-type or beam torque wrench.

Preparing to use the torque wrench

· Select a wrench that reads the desired torque at 50% to 70% of the wrench's capacity. Using a wrench at the high or low end of capacity may result in less accurate readings.

· If the wrench has been sitting for a while, get its parts moving again before using it. One way to do this is to adjust the torque setting to the middle of its range (for example, about 60 ft-lb on a 120-ft-lb wrench). Next, put it on a fastener and make the wrench click five or six times at the 60-ft-lb setting. Finally, adjust it to the required torque for the job.

· Don't use nuts or bolts that have damaged threads.

· Run a tap into all threaded holes to clean the threads and run a die over the bolts. Debris in the hole or on the threads will give an inaccurate torque reading.

· Lubricants are generally used on threads and bolt heads to get more consistent readings; otherwise a higher twisting resistance is felt by the

torque wrench.

Using a torque wrench

· When using a wrench, keep the handle perpendicular to the shaft of the fastener so you're constantly pulling in a level plane. Do not pull up or push down on the wrench as you pull the handle.

· Always apply smooth, steady pressure to a torque wrench.

· Always torque fasteners in steps. When tightening down a part in preparation for final torque make sure to use the recommended sequence to get true torque readings. You must torque all fasteners at each tightening stage. The normal stages for fastening in steps are 50%, 75%, and 100%. Some applications specify more stages, so know those before you get started.

· Do not use a torque wrench for more than an hour without setting it to zero.

Caring for your torque wrench

· Torque instruments should be stored in their original case and not in any location subject to high or low temperatures or high humidity.

· Clicker-style torque wrenches should always be turned down and stored at the torque wrench's lowest possible setting to relax the internal spring. If you compress the spring too long it experiences a "memory shift" and eventually will be inaccurate.

· The time to release the pressure on the spring is when you've made your last torque check. It's always good to "exercise" the torque wrench before putting it away. Move the torque setting through its full range of motion, and then set it back to zero.

· Periodically check calibration accuracy.

Why torque wrenches don't work properly

· Highly used instruments will show more wear than those that are only used occasionally.

· Storing "clicker" style torque wrenches in any setting besides the lowest one will cause main spring wear and failure.

· Failure to properly have the tool cleaned and calibrated regularly.

· "Crow's feet" and other extensions added between the wrench head and fastener cause the wrench to understate torque, because they add leverage on the end where you are measuring torque.