

Tool Time with Chuck!

Do You Know What I'm Torquing About?

by Chuck Wills

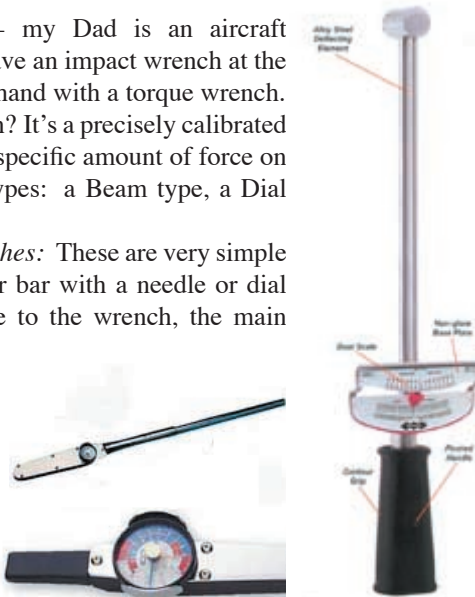
This month I'm trying to avoid temptation. Since I've been hanging around with the guys at AIM I have been exposed to some of the coolest tools ever created. Tire changers, plasma cutters, bearing pullers and air powered drills. I have to admit that I'm tempted to write about these heavy duty gadgets, but lets face it, they aren't normally found in the tool arsenal of the home mechanic. So even though I really want to tell you about plasma cutters, this month we will cover torque wrenches.

Have you ever been to a mechanic at a big garage or discount store? If you watch carefully you will notice that for most jobs involving removal and installation of bolts they will pull out the impact wrench and beat the fastener mercilessly. Impact wrenches are good for a few things: remove rusty nuts and bolts, remove nuts that are on really tight or loosening lug nuts. That's about it. You should never use an impact wrench to install anything. Why, you ask? It's because impact wrenches are very powerful, yet imprecise. Meaning that you can't use it to fasten something to a precise torque... and every fastener in a car has a specific torque. Using more torque than needed on a fastener will run the risk of damaging it by stripping out the threads, breaking the fastener in half, or more likely, stretching it out of shape so that it will no longer hold tightly.

A good case in point - my Dad is an aircraft mechanic, and they do not have an impact wrench at the shop. Everything is done by hand with a torque wrench.

So what is a torque wrench? It's a precisely calibrated tool that allows you to put a specific amount of force on a fastener. There are three types: a Beam type, a Dial type and a Click type.

Beam and Dial Torque Wrenches: These are very simple tools, consisting of a breaker bar with a needle or dial on it. When you apply force to the wrench, the main beam will bend due to the force. The dial indicates how far the beam is bent, thus indicating the amount of torque applied to the fastener. These wrenches will stay "calibrated" forever, given a reasonable amount of care. As long as you use it within it's rated torque range 80 foot pounds of torque will always register as 80 foot pounds. The down side is, you have to watch the dial carefully to make sure you stop tightening at the right measurement.



Click Torque Wrenches: While much more complex than the beam type, the click type is able to read torque much more accurately. The Click type looks like a large ratchet handle with a knob on the end. You use the knob to dial in the amount of torque you want, and when that level is reached the wrench will "click" to indicate it's tight. With this wrench it's easy to differentiate between



80 and 81 pounds. That level of accuracy just isn't possible with the beam type wrench. The down side is that you have to remember to set the adjuster back to Zero Pounds when finished using it, and you have to have them recalibrated every once in a while to maintain accuracy.

Even if you are not a shade-tree mechanic, or even tinker with your car, I do recommend that you keep a torque wrench around. If you ever get a flat or have to change a wheel, you need to make sure that you get those lug nuts torqued properly to 85 pounds. You can find beam type wrenches for less than \$20, and entry level click types can be found for \$30 or so.

I give the beam or dial wrenches an 8.5 on my tool approval scale. They are cheap and



simple, but not as accurate as the click type wrenches.

The click type wrench gets a full 10 points! Even though it's slightly more expensive, the accuracy more than makes up for this. I highly recommend the click type torque wrench.



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