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TORQUE WRENCHES: ONE CLICK IS ENOUGH



Norbar Industrial Torque Wrench being applied to Wheel Nut

Incorrectly tightened wheel nuts can leave garages liable in the event of bolt failure. Dave Waters, Torque Specialist at Norbar Torque says that one click is enough.

Like most drivers I often take my car into a franchised dealership or an independent garage for a change of tyres.

Usually, the mechanic removes and then replaces the wheel with a torque wrench. All generally goes well until the first click of the wrench which signifies that the nut has been tightened to its optimum torque.

However, all too often in my experience the mechanic continues to tighten the nut beyond its optimum torque. In the past, I have counted two, three and even four clicks of the torque wrench before the operator stops tightening.

The assumption appears to be that a nut can never be "too tight". Unfortunately, this is untrue, as the impact of a nut being too tight is as serious as being too loose.

For this reason, all car manufacturers specify the correct torque for wheel nuts on their vehicles in the handbook. For example, a wheel nut on a BMW 5 series is 120 N.m, whilst a Ford Focus Titanium requires only 95 N.m.



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Why is this important? Because, when the nuts are attached to the wheel bolts or studs, the bolts stretch as the nut is tightened. By over-clicking you apply extra torque and apply extra load which further stretches the bolt above and beyond its optimum capacity. This brings the bolt closer to its yield point which can ultimately lead to bolt failure.

Conversely, under-tightening can be equally as dangerous. A wheel nut applied with inadequate torque can work itself loose through general use or vibration of the vehicle.

So how can we define best practise when it comes to tightening wheel nuts? First off garage operators must check the torque required by different vehicles. The variation may only be minimal, but it is still vital to check.

Secondly, it is crucial to use a torque wrench checker or a torque wrench calibration device to check the accuracy of the wrench. Our recommendation is that a torque wrench is checked at least once a year or every 5,000 cycles, whichever event happens first. Busy garages can get through thousands of calibration cycles, or clicks, every month and it is important therefore to align torque wrench calibration with work volumes, to ensure the unit remains within accuracy.

Of course, torque wrenches are not the only method of tightening wheel nuts. I'm sure many of us have been to garages where pneumatic impact guns are used to tighten bolts. Again, there is a basic rule of thumb that must be followed. If an impact gun is being used it must apply less than the specified torque and the task completed with a torque wrench in order to ensure accuracy.

All of this may sound overly complex but garages must remember that, in the event of bolt failure, if it can be proven that a bolt has been over-tightened, liability may potentially rest with them.