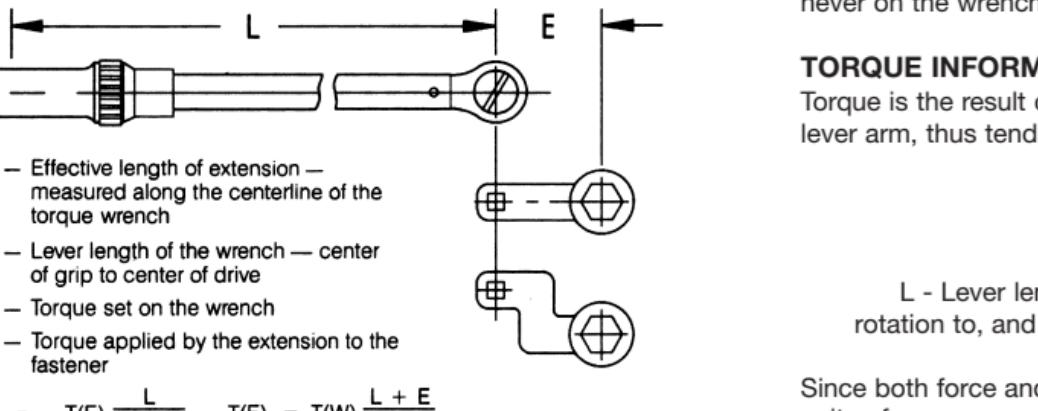


EXTENSIONS

At times, it is impossible to use regular sockets, and a special attachment must be utilized. Such attachments change the calibration of the torque wrench, and it is necessary to calculate the correct settings using the following formulas.



Putting a piece of pipe onto the wrench to make torquing easier should NOT be used under any circumstances. Their

use will result in erroneous torque readings, and may damage the grip or the adjusting mechanism. While applying torque, the wrench should be held only by the grip. At high torque readings, if both hands are necessary to apply enough pressure to operate the wrench, hold the grip in one hand and put the other hand on the top of the first hand, never on the wrench body.

TORQUE INFORMATION

Torque is the result of a force applied to an object through a lever arm, thus tending to rotate the object.

$$T = F \times L$$

T - Torque

F - Applied Force

L - Lever length measured from the center of

rotation to, and 90 degrees to, the direction of force.

$$T(W) = T(E) \frac{L}{L + E} \quad T(E) = T(W) \frac{L + E}{L}$$

Since both force and length can be expressed in different units of measurement, so can torque. However, the most common units are: Inch pound (in-lb or lb-in), foot pound (ft-lb or lb-ft), meter kilogram (mkg) and Newton meter (N-M). When torque is applied to a threaded fastener, it produces a clamping force that holds the components together. Too much force, and the fastener will break. Not enough, and the assembly will not stay together. By controlling the amount of torque, the clamping or holding force is controlled.

IMPORTANCE OF TORQUE

SAFETY: Bolts or nuts which are not tightened enough may vibrate loose. Overtightened bolts may break.

ECONOMY: Improperly tightened components may cause damage or accelerated wear. 'Blown out' gaskets and broken head bolts are typical examples of such errors.

PERFORMANCE: Precision parts need to be assembled just right to achieve maximum efficiency and performance. Improperly tightened head bolts may result in poor compression, overtightened bearing may bind.

CONVERSION FORMULAS

$$1\text{CMKG} = 13.887 \text{ IN-OZ} \quad 1\text{dNm} = 14.16 \text{ IN-OZ}$$

$$1\text{CMKG} = 0.867 \text{ IN-LB} \quad 1\text{Nm} = 8.8507 \text{ IN-LB}$$

$$1\text{MKG} = 7.233 \text{ FT-LB} \quad 1\text{Nm} = 0.73756 \text{ FT-LB}$$

$$1\text{KPCM} = 1\text{CMCKG} \quad 1\text{KPM} = 1 \text{ MKG}$$

$$1\text{CMCKG} = 0.98\text{Nm} \quad 1\text{MKG} = 9.80665\text{Nm}$$

$$1 \text{ FT-LB} = 12 \text{ IN-LB}$$

CARE AND MAINTENANCE

1. The Torque Wrench is a precision instrument and should be handled and stored with proper care. It should be only used as a torque wrench.

2. Never apply more torque than the rated capacity of the torque wrench. Never use as a nut breaker.

3. When the wrench is not in use, keep it set below 25% of capacity. This will affect future accuracy.

4. The wrench is lubricated for life with a special lubricant. Do not oil it in any way, except if the ratchet head needs further lubrication for smoother operation.

5. The plastic grip is not affected by petroleum products. Clean the wrench with a clean cloth wetted in mineral spirits or denatured alcohol. Never immerse the wrench or any portion of it in any liquid.

6. Periodically check the wrench for accuracy. In assembly line type of usage, the wrench should be checked every 5,000 torque applications.

SPECIFICATIONS

Model # 79-141 **79-142**
Drive 3/8" Ratchet **1/2" Ratchet**

Capacity 120-600 in-lbs. **10-15 ft.-lbs.**
Right hand direction only. **Right hand direction only.**

Increments 12 in-lbs. **1 ft.-lbs.**

Dimensions 13.5" x 4" x 2.5" **2.125" x 4.50" x 1"**

Weight 1.60 lbs. **3.3 lbs.**

Lever Length: varies with different torque settings.

This torque wrench does not meet ANSI Specs (ANSI B107-14M) and does not guarantee accuracy.

Durastat



Owner's Manual

For Model No's:
79-141
79-142

SAFETY RULES

1. STUDY THIS BOOKLET CAREFULLY BEFORE ATTEMPTING TO OPERATE THIS WRENCH.
2. Do not apply more torque than the maximum scale reading.
3. This torque wrench is designed for manual tightening of threaded fasteners only. Do not use this for any other purpose. This wrench will not prevent you from applying more torque than set. At low settings the release is gentle and there is no 'click' signal.
4. Defective or overtorqued fasteners and sockets may break suddenly. Ratchets that are not engaged properly, damaged, worn out, or overtorqued may slip or break. Please keep proper footing and balance at all times to prevent injury. Do not use this wrench in places from which you may slip or fall. Do not use around operating machinery.
5. Apply force to the grip only. Do not use any other objects to help assist.
6. There are no user-serviceable components inside the wrench. Disassembling the wrench or making any adjustments will result in a loss of accuracy, and will void the warranty.

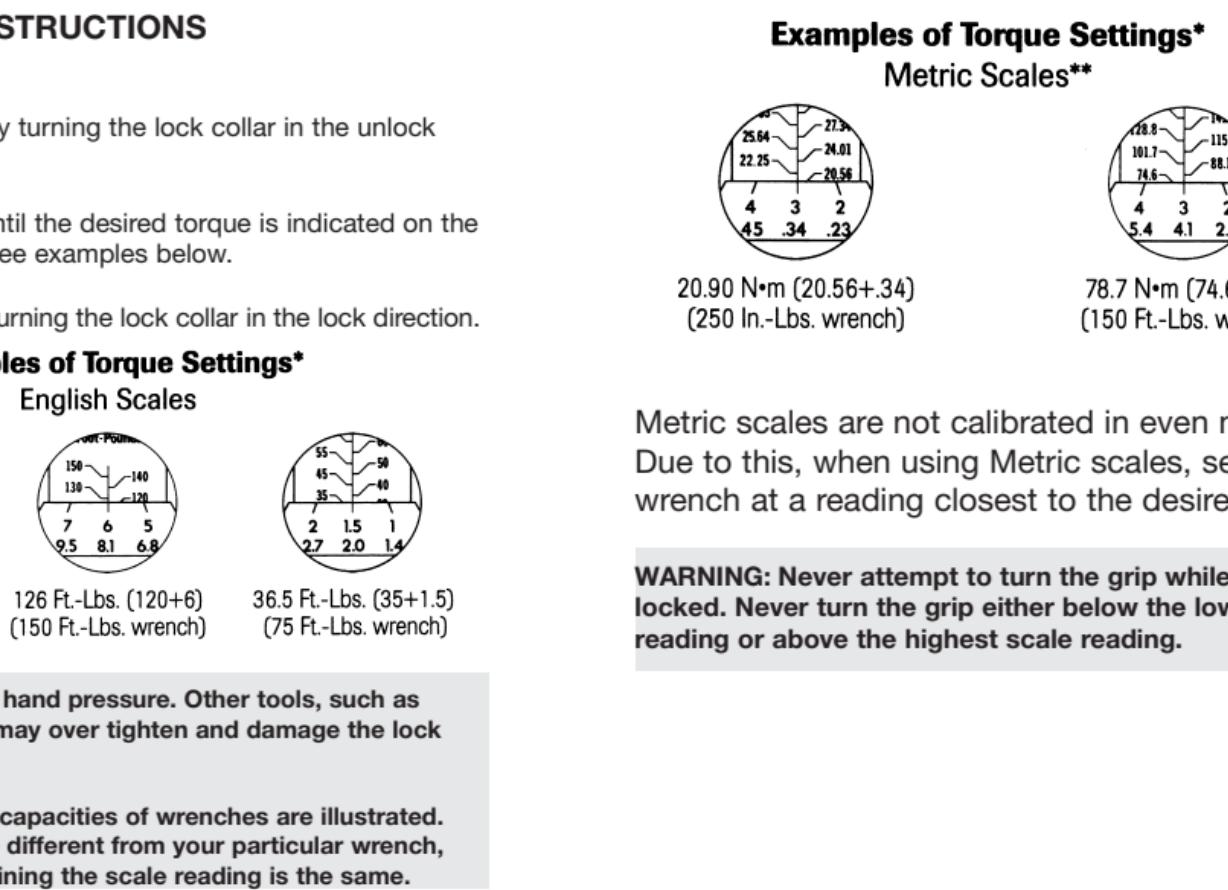
FEATURES

The Torque Wrench indicates when the pre-set torque value has been reached by releasing the handle for a few degrees of free travel. This release is accompanied by an audible 'click' signal and lets the operator know to stop applying any pressure.

The torque is adjusted by unlocking and turning the handle. The amount of torque is shown on micrometer type scales stamped into the housing and handle. There are two scales. One scale is for English torque units. This includes: inch pounds or foot pounds. The other scale is for metric torque units, which is Newton meters. The wrench is equipped with a reversible ratchet head which may be used in both right and left hand directions. The ratchet head accommodates extensions, sockets, crowfoot adapters, and other attachments to fit a multitude of fasteners in automotive, marine, industrial, aircraft and other applications.

The wrench housing is made from precision drawn steel which is heat treated for strength and hardness, polished and chrome plated for corrosion protection and superior appearance. The ergonomic grip design is contoured to fit securely into the hand.

Please read this book properly before using your new torque wrench.



OPERATING INSTRUCTIONS

TO SET TORQUE

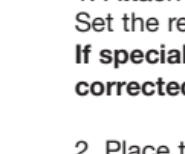
1. Unlock the grip by turning the lock collar in the unlock direction. **If special attachments are used, torque setting must be corrected in accordance with the "Extensions" page.**

2. Rotate the grip until the desired torque is indicated on the micrometer scale. See examples below.

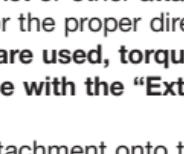
3. Lock the grip by turning the lock collar in the lock direction.

Examples of Torque Settings*

Metric Scales**



20.0 N·m (20.0 kgf·cm)
(20.0 ft-lb wrench)



7.87 N·m (7.87 kgf·cm)
(10.0 in-lb wrench)

Metric scales are not calibrated in even numbers. Due to this, when using Metric scales, set the wrench at a reading closest to the desired torque.

4. While holding the wrench by the grip, apply slow and steady pull until a monetary release impulse is felt. Release tightening pressure immediately when the release is felt. **WARNING: At low torque settings, the release is gentle and there usually is no audible 'click' signal. Learn how to release feels for best performance.**

When using long sockets or extensions, the wrench may be supported at the head with only negligible effects on accuracy.

5. The wrench resets automatically and is ready for the next operation.

Various models and capacities of wrenches are illustrated. Though they may be different from your particular wrench, the principle of obtaining the scale reading is the same.

SUGGESTIONS

1. Thread on bolts, nuts and other fastening components should be clean and smooth. A lubricant applied to the threads and under the heads of bolts will produce more accurate and consistent results.

2. Do not torque a fastener that is already tightened. Loosen it first, then re-torque to the desired value. The same applies to fasteners that were accidentally over-torqued.

3. When tightening many fasteners holding one component, follow manufacturer's recommended procedure. If such procedures are not available, torque in a cross-cross manner, first 50%–60% of the desired torque, then to the final torque.

WARNING: Never attempt to turn the grip while it is locked. Never turn the grip either below the lowest scale reading or above the highest scale reading.

When using long sockets or extensions, the wrench may be supported at the head with only negligible effects on accuracy.

5. The wrench resets automatically and is ready for the next operation.