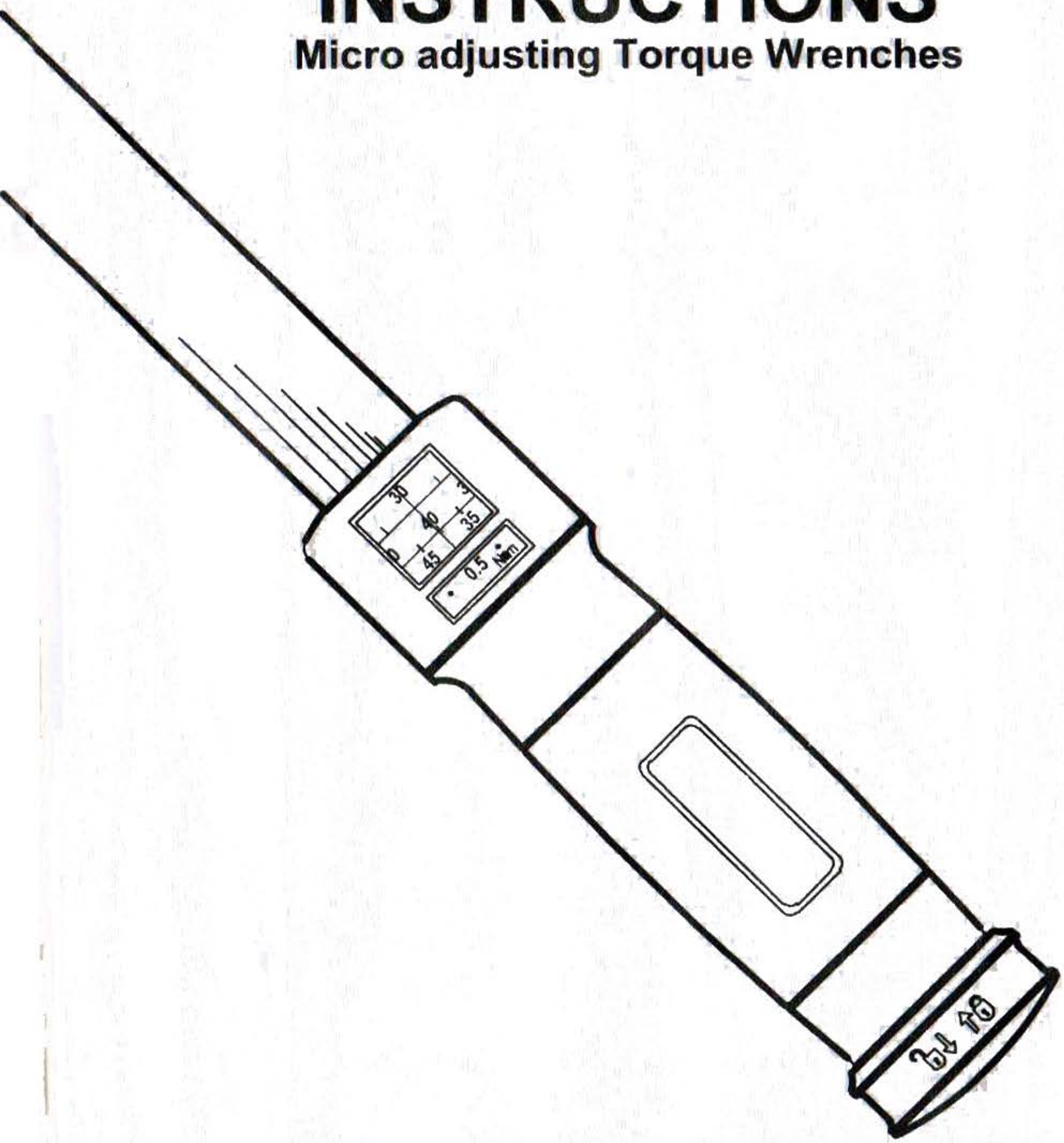
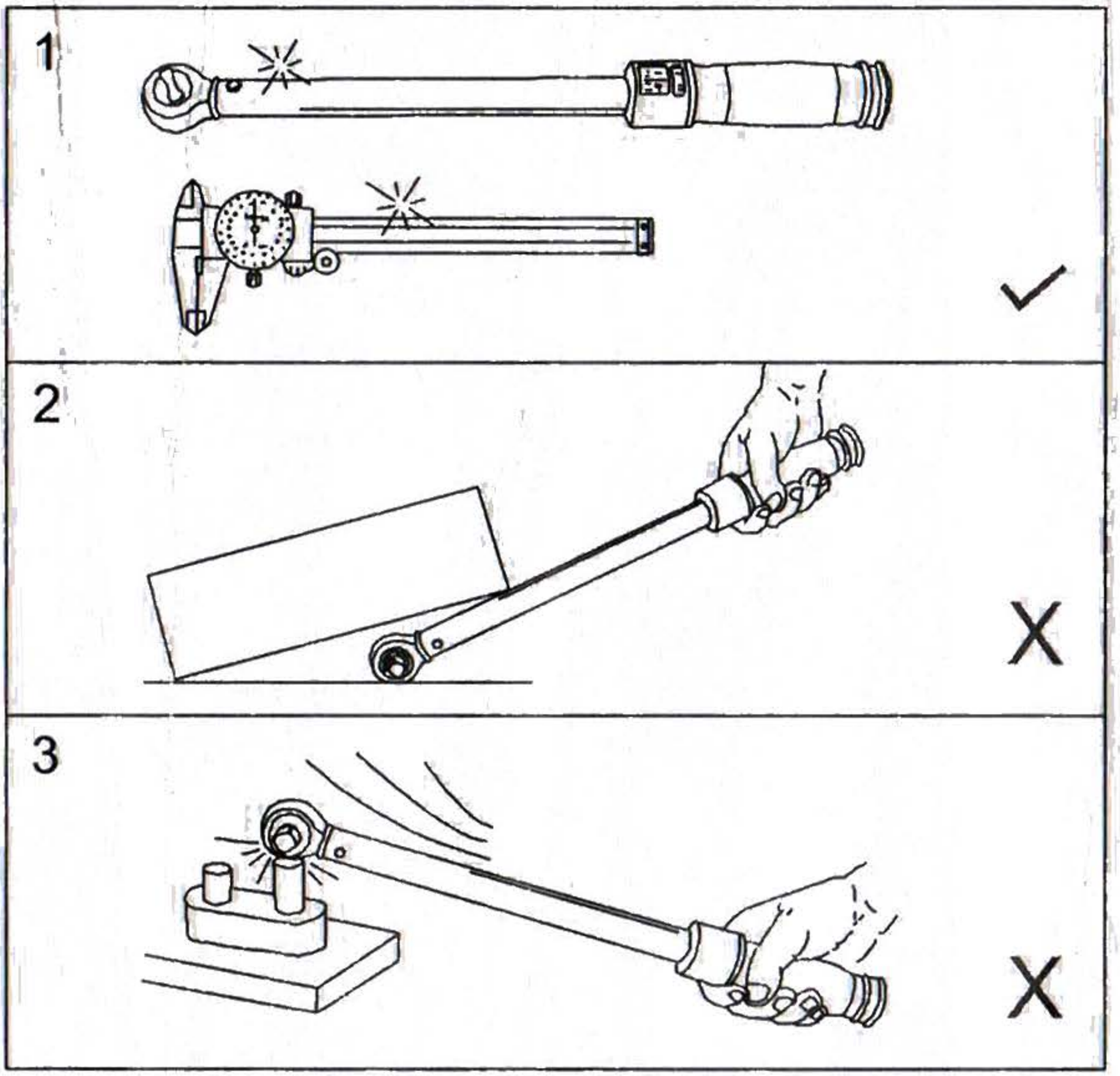
INSTRUCTIONS

Micro adjusting Torque Wrenches



READ BEFORE YOU USE

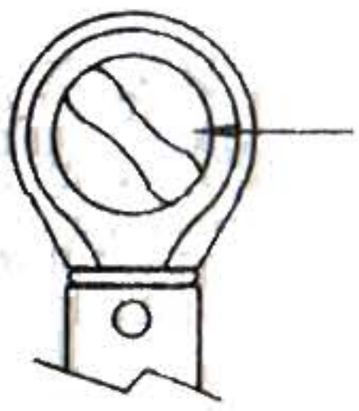


1.This torque wrench is a precision instrument intended to be used only to tighten screws, bolts and nuts to a desired torque.
2. Do not use it as a "nut breaker", pry bar, hammer, or in lieu of a regular ratchet wrench.
3.Do not apply torque in excess of the maximum capacity of the wrench. Apply load on the grip only, and do not use any handle extension bars (a piece of pipe put over the grip).
4.Head Holder torque wrench should be used with heads.If using special heads,please set torque as formula on page 7.

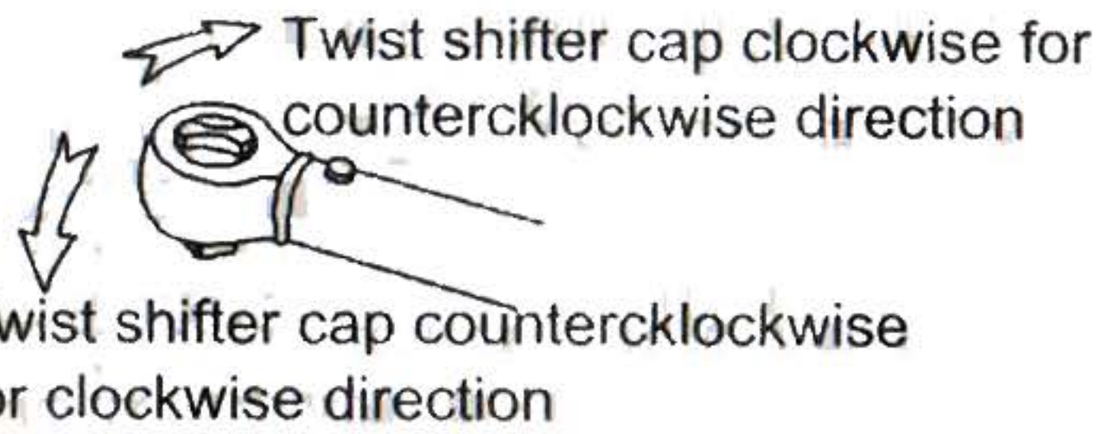
5. Make sure that you adjust the wrench to the exact torque units your specifications call for, or you will severely under-torque or over-torque, causing severe damage to the equipment you are working on.
6. Do not disassemble the wrench for any reason. Highly stressed internal components may cause severe injury when released in an unintended manner.
7. The wrench should be re-calibrated periodically. The calibration of the wrench should be checked at least once a year, after any abnormal handling or overloading, or after 5,000 cycles ("clicks").

Head types

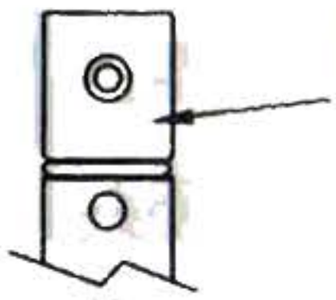
1. Fixed Ratchet head



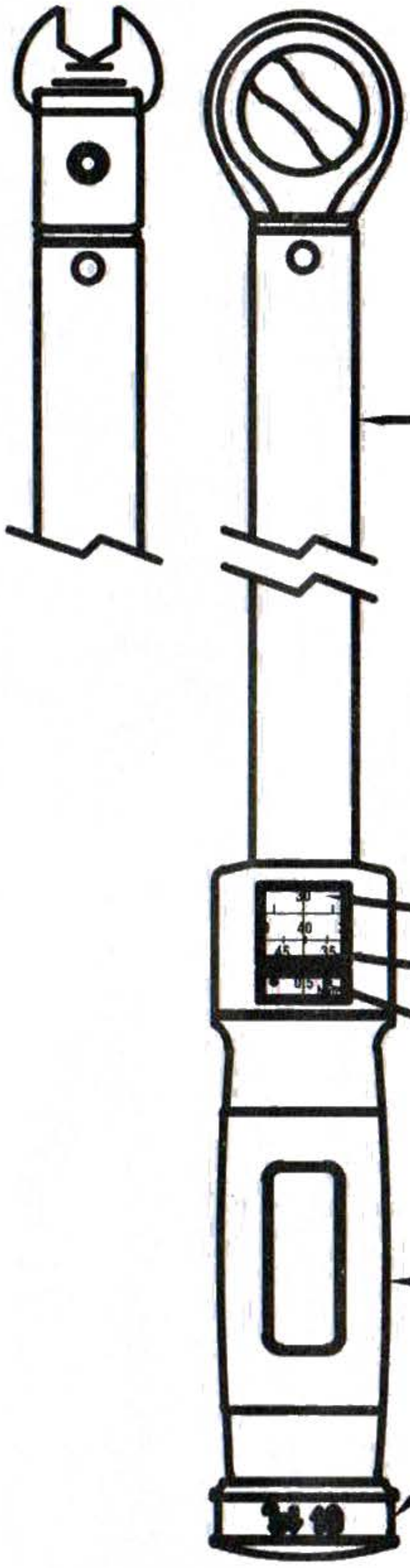
45-tooth reversible ratchet:wrench operates in both clockwise and counterclockwise direction. However, unless stated otherwise, the wrech is calibrated in clockwise direction only.



2. Head holder



Holds different size Ratchet Heads, Open End, Box End or Open Box End heads.



Torque wrench indicates when the preset torque has been reached by releasing for a few degree of free travel, which is usually accompanied by an audible "click" signal.

Hardened alloy steel housing

EASY TO READ SCALES:

Secondary Torque Units

Major Primary Torque Units

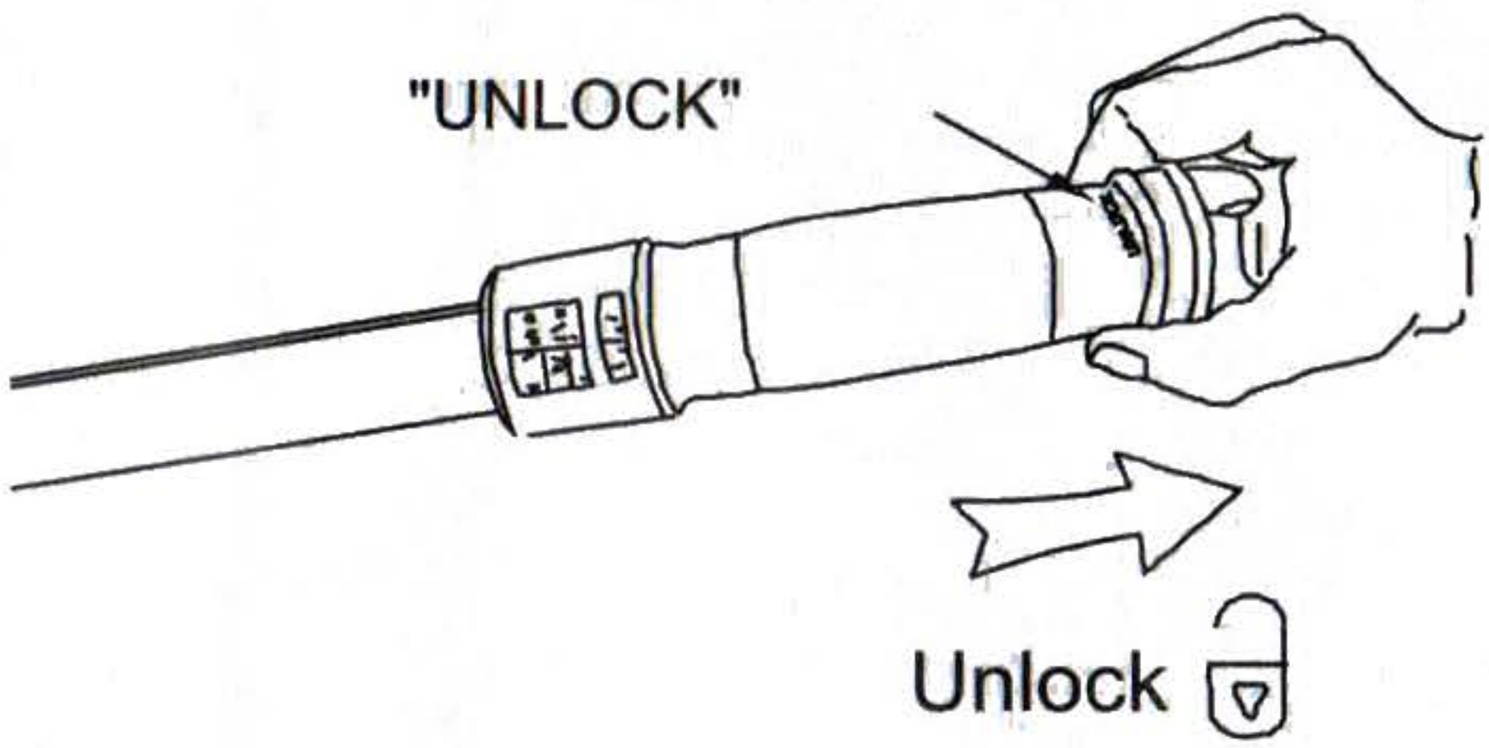
Minor Primary Torque Units

Ergonomic soft grip

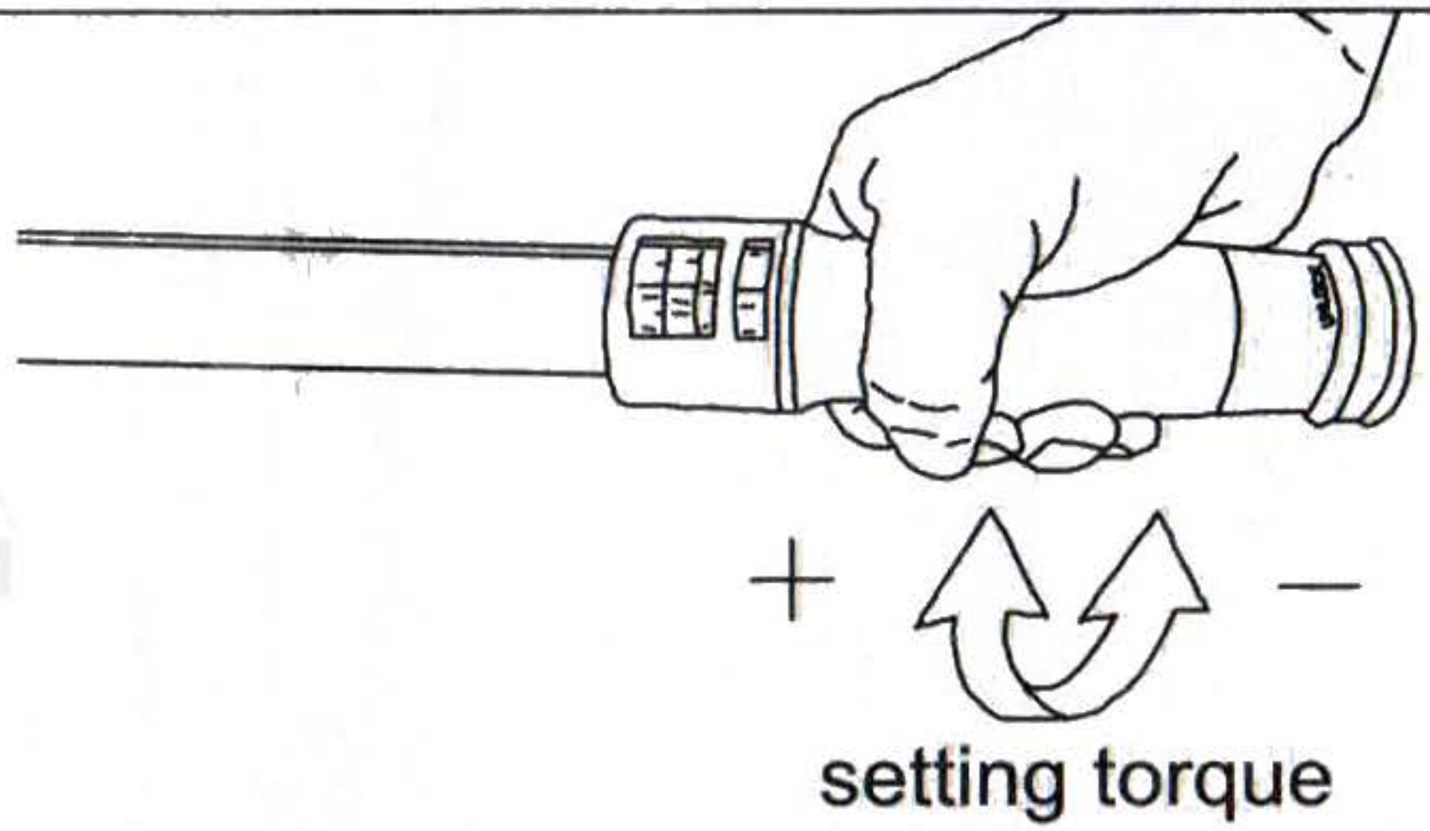
Lock Knob secures selected torque from accidental change

SETTING TORQUE

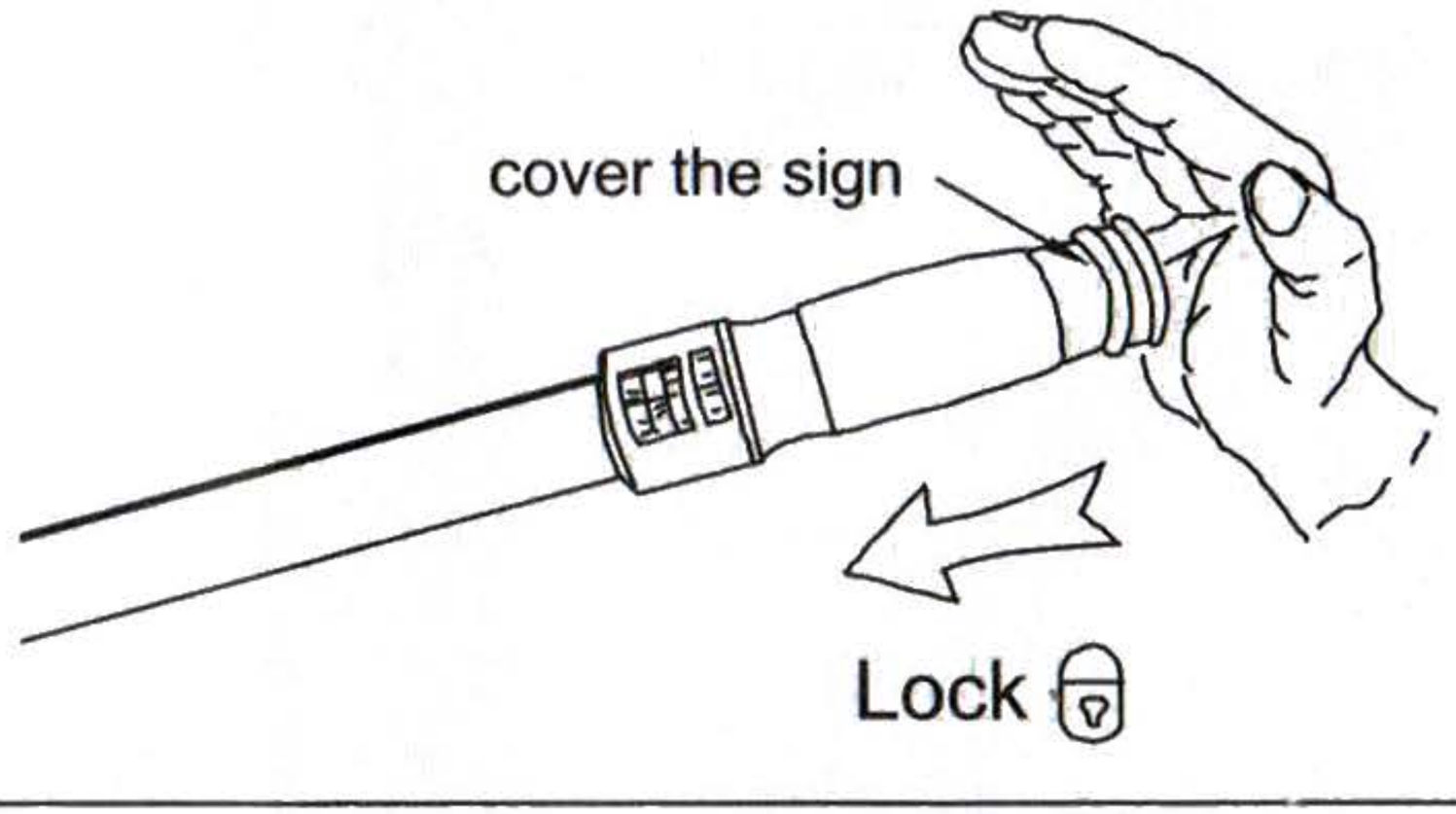
1



2



3

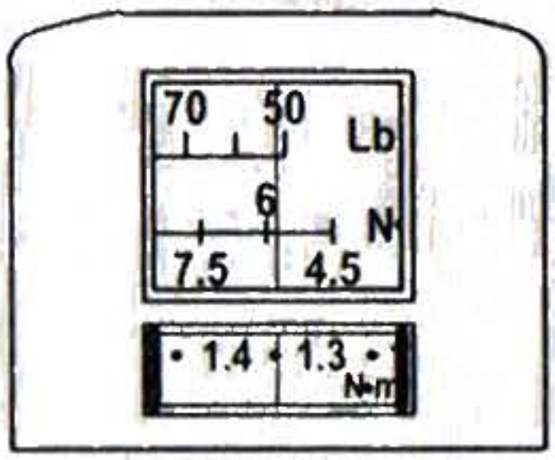


SETTING TORQUE

1. Pull the lock knob out, "UNLOCK" sign should be visible.
2. Turn the grip in the clockwise direction to increase the torque, and in the counterclockwise to decrease it. Please set torque going up the scale. If you exceed desired torque, please adjust torque to one revolution below the desired torque, then back up.
3. The major scales show the amount of torque in both primary and scondary units. The minor scale shows fine increments in primary units. See examples below.
4. Push the lock knob in to lock the grip. The minor scale may be slightly off the centerline mark without affecting the accuracy of your settings.

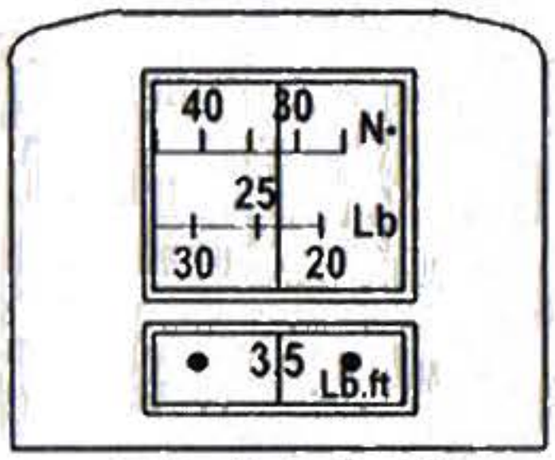
EXAMPLES OF SETTING

30 N.m wrench



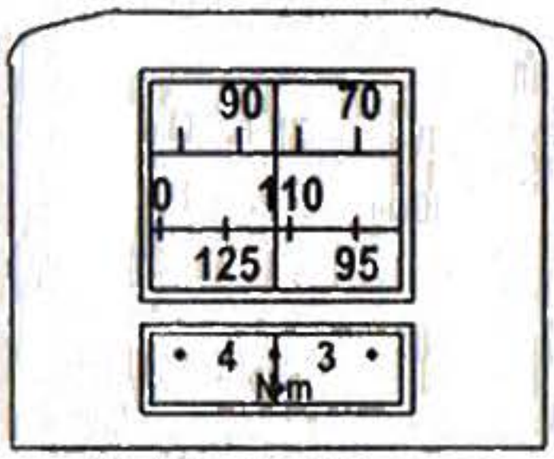
5.85 N.m
52 Lb.in

100 Lb.ft wrench

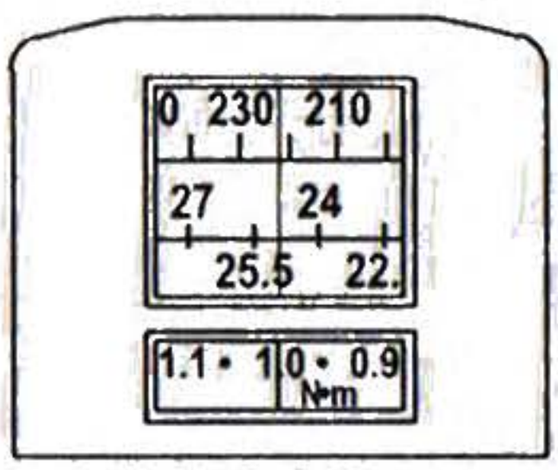


23.5 Lb.ft
32 N.m

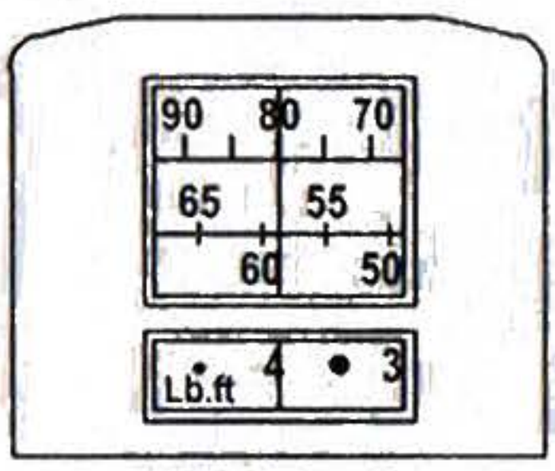
335 N.m wrench



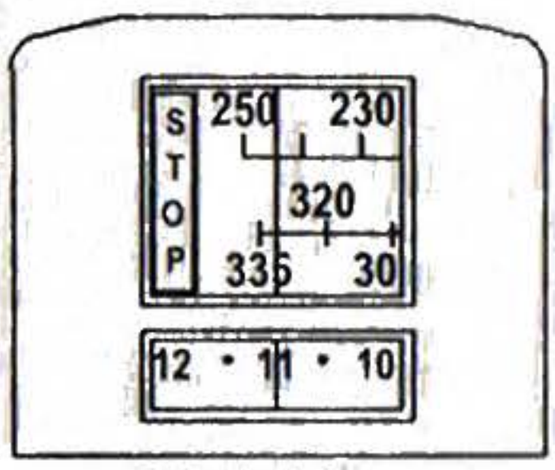
113.5 N.m
84 Lb.ft



25.0 N.m
221 Lb.in



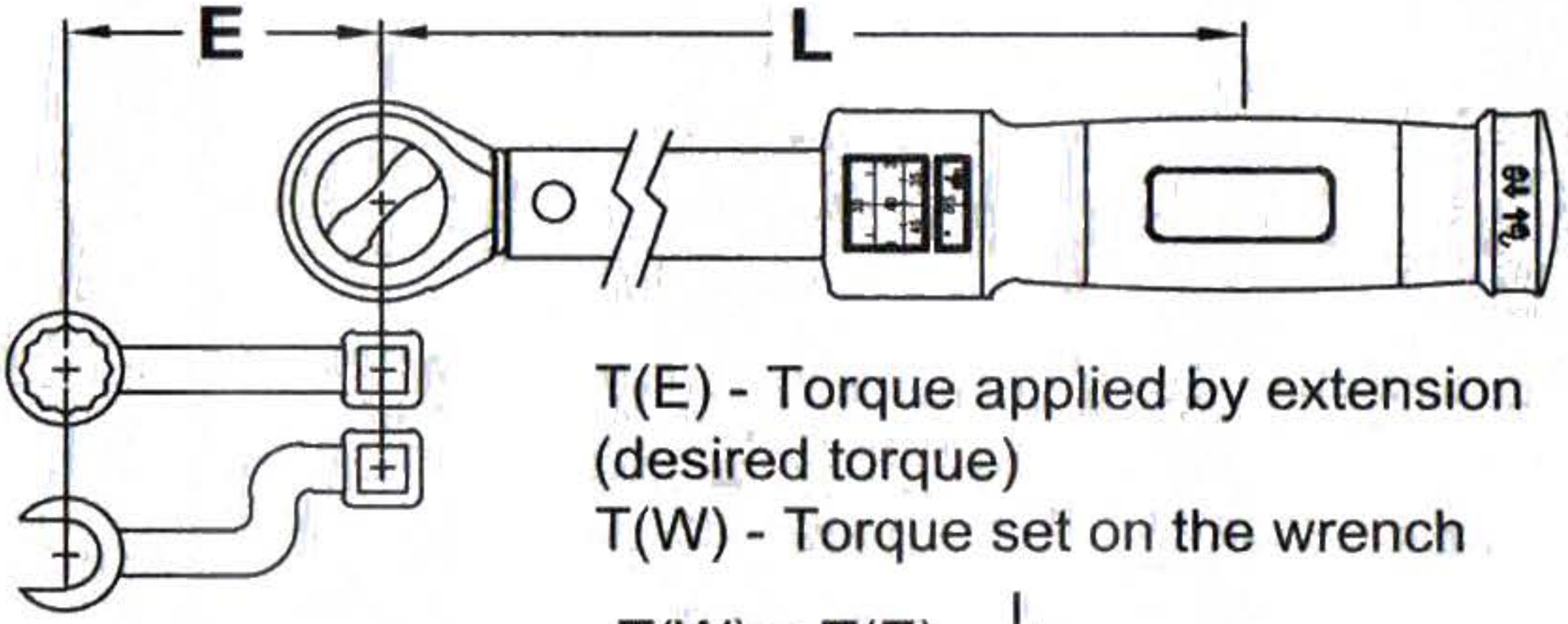
59 Lb.ft
80 N.m



331 N.m
244 Lb.ft

USE OF EXTENSIONS

Attachments and non-standard heads will cause the applied torque to be different from the set torque.Consequently when using them,the set torque must be adjustd in accordance with the formula shown on below.



T(E) - Torque applied by extension (desired torque)
T(W) - Torque set on the wrench

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

APPLYING TORQUE

1. Insert an appropriate socket or drive attachment onto the square drive of the ratchet and onto the fastener you want to tighten.
2. Apply hand pressure to the grip, and ONLY TO THE GRIP. You may support the wrench at the ratchet head with the other hand to steady it, especially when using long socket extensions, without appreciably affecting the accuracy of the wrench.
3. If, due to the required effort, you need to use both hands, put the other hand on the top of the first hand, never on any other part of the wrench.
4. Apply slow and steady pull or push until the wrench momentarily releases, with or without a distinct "click" sound. Release the pressure right at this point. DO NOT OVERTORQUE!

SAFETY WARNING

Overtorqued or defective fasteners, sockets, as well as the wrench itself, may suddenly break causing you to lose balance, fall, or to suffer other trauma. Be sure that you have firm footing, are properly balanced, and if necessary are using appropriate harness, back support, or other safety device.

MAINTANANCE

1. When not in use, adjust the wrench to its lowest reading ,and store it in the provided case.
2. With the exception of the ratchet mechanism, do not lubricate the wrench. The ratchet mechanism may be lubricated as needed with a few drops of light machine oil.
3. Do not use acetone or other solvents to clean the wrench, use window cleaner or denatured alcohol applied with a clean cloth instead.
4. With the exception of the ratchet mechanism, there are no user-serviceable parts. Do not disassemble the torque wrench for any reason. When service is needed, send the wrench to the nearest factory-authorized service center.

CERTIFICATION

This torque wrench is certified to have been calibrated prior to shipment to the accuracy of +/- 4% in the clockwise direction.