LASER®

Part Nos. 7906-7909

Digital Torque & Angle Wrenches

Instructions

Many modern torque applications require a torque and angle setting to be applied. Traditionally this means the use of 2 separate devices, including an often difficult to setup angle protractor. The Laser range of Digital Torque & Angle wrenches simultaneously show both the torque and angle applied. This is a real time saver, with no need for 2 separate tools, speeding up the torqueing process. In addition, the internal memory function offers the ability to not only store pre-sets but also store the results. Ideal for engineering audits.

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Introduction

This new Laser Tools range of electronic digital torque wrenches is designed for the professional user when a high degree of accuracy is required. As well as measuring torque applied, these wrenches also measure the angle turned. This is necessary for example when tightening stretch-bolts, where the manufacturer's tightening instructions require the fastener to be tightened to a specified torque setting, then further rotating the fastener through a specified angle.

The two 3/8" drive examples 7906 (6-30Nm) and 7907 (20-100Nm) are designed for when lower torque is required and thus suitable for racing applications, motorcycle applications, spark plugs, bleed nipples, alloy blocks and cylinder heads, securing alloy tyre valves in alloy wheels, etc. The 1/2" drive examples 7908 (40-200Nm) and 7909 (68-340Nm) are for mainstream vehicle workshop use.

The wrenches are bi-directional, allowing torque and angle to be measured in both directions. They have easy to read electronic displays that shows Nm, foot/pounds, inch/pounds, and kilogram-metres. Can be set to 'peak' (maximum torque applied) or 'trace' (reading in real time as torque is applied to the fastener), and torque readings are visual ('traffic light' LEDs) and audible. The inbuilt memory will hold up to 10 torque settings. The previously set angle measurement will remain until it is changed.

Specifications

7906	
Ratchet	3/8" drive, 72 teeth, CW / CCW
Torque range	6-30Nm (4.4-22.1 ft-lb)
Length	405mm
Weight	1.1kg

7907	
Ratchet	3/8" drive, 72 teeth, CW / CCW
Torque range	20-100Nm (14.75-73.8 ft-lb)
Length	405mm
Weight	1.1kg

Specifications

7908	
Ratchet	1/2" drive, 36 teeth, CW / CCW
Torque range	40-200Nm (29.5-147.5 ft-lb)
Length	530mm
Weight	1.5kg

7909	
Ratchet	1/2" drive, 36 teeth, CW / CCW
Torque range	68-340Nm (50.1-250.9 ft-lb)
Length	650mm
Weight	1.6kg

Across the range	
Torque accuracy	CW: 2% / CCW: 2.5%
Angle accuracy	(+/- 1% of reading) + (+/- 1% angular velocity > 10°/sec <180° /sec)
Angle range	0-360°
Torque Pre-sets	10
Angle Pre-set	1
Unit	Nm, ft-lb, in-lb, kg-m.
Mode	Trace / Peak
Alert	LED (progressive) + beeper
Batteries	3 x AAA
Auto shut-off	60 sec
Ambient operating temperature	-10°C - 60°C (14°F - 140°F)
Storage temperature	-20°C - 70°C (-4°F - 158°F)
Operating relative humidity	15-90% non-condensing
Packaging	Blow mould case

Controls

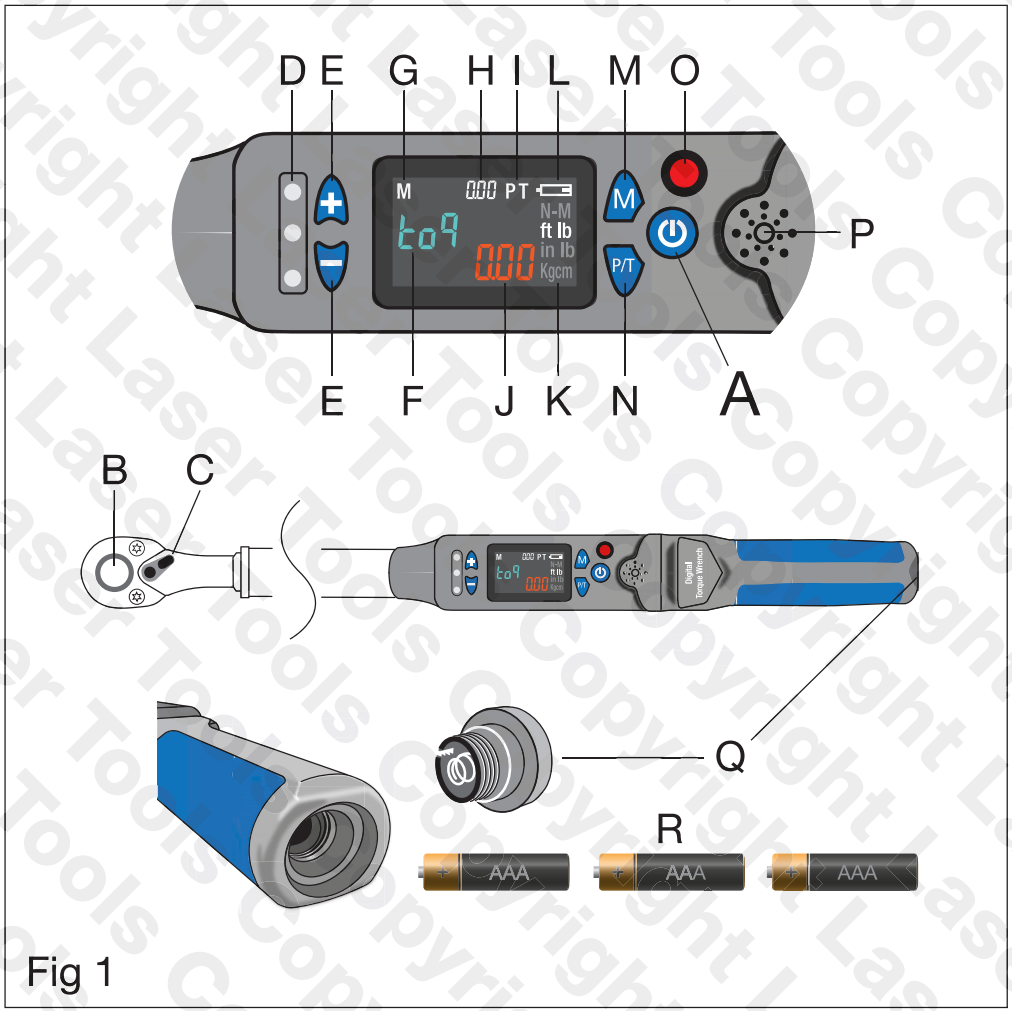

Fig 1

Controls

Ref.	Description
A	ON / OFF button
B	Quick-release mechanism
C	Ratchet right / left switch
D	LEDs
E	+ and - controls
F	Function indicator (Torque, Torque + Angle, Torque then Angle)
G	Memory pre-set indicator
H	Torque or Angle setting indicator
I	Peak or Trace indicator
J	Live Torque display
K	Unit selected (Nm, ft-lb, in-lb, Kg-m,)
L	Battery condition (low battery) indicator
M	Memory pre-set selector
N	Peak/Trace selector
O	Angle mode button
P	Beeper
Q	Battery compartment cap
R	Batteries (3 x AAA)

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Battery Installation & Changing:

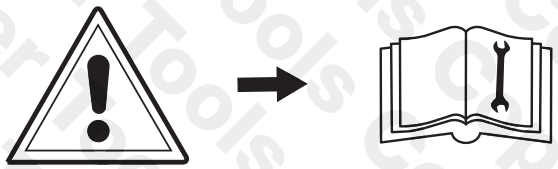
The digital torque wrenches are powered the three (3) AAA 1.5V batteries.

Refer to Figure 1: The battery condition indicator (**L**) is displayed briefly on start-up. The indicator will appear again if the battery voltage is low. Replace the batteries immediately. To access the battery compartment, remove the cap (**Q**) by rotating anti-clockwise. The batteries (**R**) are fitted positive (+) end first. Screw the cover firmly back into place.

Dispose of used batteries according to local authority guidelines.

Always remove the batteries if the tool is in storage and not in constant use.

Operation:



Refer to manufacturer's service procedure and documentation to ascertain tightening procedure for the fastener.

Power-On:

Refer to **Figure 1**: Press and release the ON / OFF button (**A**). Wait for approximately two (2) seconds for the display to register 0.0 on the torque / angle display (**J**).

If the wrench is not used for 60 seconds it will shut off automatically.

How to select the unit measurement setting:

1. Refer to **Figure 1**: Press Memory Pre-Set (**M**) and Peak/Trace (**N**) buttons together.
2. Release to select different torque measurement scales (Nm | ft/lb | in/lb | Kg/m). These are displayed on the right-hand side of the display (**K**).
3. The torque setting indicator (**H**) will automatically change when the measurement scale is selected.

How to set to 'peak' (maximum torque applied) or 'trace' (reading in real time as torque is applied to the fastener):

1. With the wrench turned on, press and release the Peak/Trace selector (**N**) to switch between the peak or trace mode. The **P** or **T** indicator (**I**) is displayed.

How to select the desired torque setting and then use the torque wrench:

1. On power-on, the screen displays the function indicator (**F**) as ***to9*** (torque).
2. Use the + and – controls (**E**) to select the desired torque setting; the torque setting indicator (**H**) shows the figure selected. Pressing and releasing the + or – control changes the setting by increments of 1/10 of a unit. Holding the + or – control down will speed up the setting selection.
3. Steadily apply torque to the fastener.
4. The three LEDs (**D**) are a progressive light system (green, amber, red) that indicates when you are approaching the desired torque. The warning beeper (**P**) will also speed up when you are approaching the desired torque.
5. When full torque is reached the red LED illuminates and a constant tone will be heard from the beeper. The torque being applied is also displayed on the live torque indicator (**J**).
6. Once the desired torque has been reached do not apply further torque.
7. Tighten in a slow and controlled manner and stop applying pressure immediately the torque wrench indicates the required setting has been reached. ***Tightening too quickly will result in an inaccurate final torque figure.***

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Instructions

How to use the angle functions:

There are two modes of torque and angle reading: ***torque and angle*** and ***torque then angle.***

How to display simultaneous torque and angle:

1. Ensure wrench is in 'peak' mode. Apply torque to the fastener and bring up to the manufacturer's stated figure.
2. Place the torque wrench on a flat, level surface.
3. Press and release the angle mode button (**O**). Wait for approximately 5 seconds then the screen displays the function indicator (**F**) as ***tnA*** (torque and angle). The live torque and angle displays will both be showing 0.
4. Use the + and – controls (**E**) to select the desired angle setting; the angle setting indicator (**H**) shows the figure selected. Pressing and releasing the + or – control changes the setting by increments of 1 degree. Holding the + or – control down will speed up the setting selection.
5. Steadily apply further torque to the fastener; the display will show both the torque and angle as the wrench turns.
6. The three LEDs (**D**) are a progressive light system (green, amber, red) that indicates when you are approaching the desired angle. The warning beeper (**P**) will also speed up when you are approaching the desired angle.
7. Stop applying torque when the desired angle has been reached.

How to display torque then angle:

1. Follow steps 1-4 in the instructions (above) for "torque and angle".
2. Again, press and release the angle mode button (**O**). The screen now displays the function indicator (**F**) as ***ttA*** (torque then angle).
3. Steadily apply further torque to the fastener; the display now just shows the angle as the wrench turns.
4. The three LEDs (**D**) are a progressive light system (green, amber, red) that indicates when you are approaching the desired angle. The warning beeper (**P**) will also speed up when you are approaching the desired angle.
5. Stop applying torque when the desired angle has been reached.

Note: The angle reading can be accumulated as you use the ratchet function, which is useful when space is limited.

Instructions

Torque Memory Pre-set Function:

The memory pre-set function allows the operator to store torque figure settings. There are 10 available memory positions. To set and store memory positions:

1. Press and release the ON / OFF button (**A**). Wait for approximately two (2) seconds for the display to register 0.0 on the torque / angle display (**J**). The previously used (non-memory) torque figure is displayed (**H**).
2. Press the memory pre-set selector button (**M**). **M1** is then displayed, with its corresponding torque figure (**H**).
3. To change the stored setting for **M1**, use the + and – controls (**E**) to select the desired torque setting; the torque setting indicator (**H**) shows the figure selected.
4. Pressing memory pre-set selector button (**M**) again will now display **M2** and the new setting for **M1** will be stored.
5. If required, set all 10 memory pre-set positions as described above.

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Precautions

- Tighten in a slow and controlled manner and stop applying pressure immediately the torque wrench indicates the required setting has been reached. ***Tightening too quickly will result in an inaccurate final torque figure.***
- Store in a clean, dry environment.
- Use a soft cloth to clean the tool and the display.
- Never submerge the wrench in water.
- Never clean the wrench with organic solvents.
- Never use the wrench to undo sockets, or use as a breaker-bar.
- Never use a length of pipe to extend the handle of the torque wrench.
- Do not exceed the maximum torque setting. **O-Ld** (overload) will be displayed.
- Do not dismantle the wrench.
- Do not expose the wrench to extreme temperature, humidity or direct sunlight.
- Do not shake or drop.
- Always remove the batteries if the tool is in storage and not in constant use.
- Do not press the Memory button (**M**) or ON/OFF button (**A**) together (torque wrench switched OFF), as the system will enter into calibration mode.

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If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool's use and while all attention is given to the accuracy of the data no project should be attempted without referring first to the manufacturer's technical documentation (workshop or instruction manual) or the use of a recognised authority such as Autodata.

It is our policy to continually improve our products and thus we reserve the right to alter specifications and components without prior notice. It is the responsibility of the user to ensure the suitability of the tools and information prior to their use.

RoHS Compliant

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