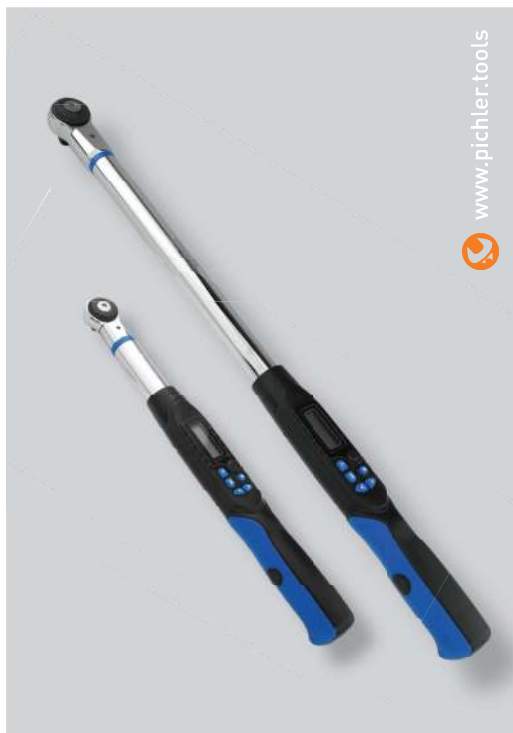




DIGITAL TORQUE WRENCH WITH RECTANGULAR SOCKET

Manual

41502135 / 41502340

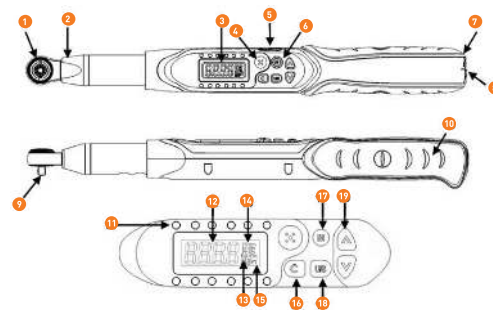
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MAIN FEATURES

- Digital torque-angle value readout
- $\pm 2^\circ$ (rotating 90° at speed of $30^\circ/\text{sec}$) for angle accuracy
- $\pm 1\%$ or $\pm 2\%$ for torque accuracy
- CW and CCW operation
- Buzzer and LED indicator for the 9 pre-settable target torques or angles
- Five Units Selectable (Nm, ft / lb, in / lb, kg / cm, $^\circ$)
- 50 or 250 data memory for recall and joint torque-angle auditing
- Auto Sleep after about 2 minutes idle
- AA regular and rechargeable batteries are compatible

NAMES AND FUNCTIONS OF PARTS



NR.	Description		
1	Interchangeable Head	11	LED Indicator
2	Sensor Yoke	12	Torque/Angle Value
3	LCD Readout	13	Pre-setting number
4	Buzzer	14	Units
5	Communication Port	15	P(Peak Hold) / T(Track) Mode
6	Buttons	16	Power On/Clear Button
7	Battery Compartment	17	Pre-setting number Selection Button
8	Battery Cap	18	Unit/Setting Button
9	Ratchet Drive	19	Up / Down Button
10	Anti-slip Handle		

SELECTION GUIDE

PART. NR.	Square Drive (inches)	Max. Torque
41502135	$\frac{3}{8}$ "	135 Nm, 99.5 ft / lb, 1195 in / lb, 1378 kg / cm, 999 $^\circ$
41502340	$\frac{1}{2}$ "	340 Nm, 250.7 ft / lb, 3009 in / lb, 3469 kg / cm, 999 $^\circ$

SPECIFICATIONS

PART. NR.	Max. Torque (Nm)	Square Drive (inches)	Torque Measuring Range (Nm)	Length (mm)
41502135	135	$\frac{3}{8}$ "	[6,8] 27 - 135	410
41502340	340	$\frac{1}{2}$ "	[17] 68 - 340	640

Torque Accuracy *1	CW: $\pm 2\%$ CCW: $\pm 3\%$
Angle Accuracy *2	$\pm 2^\circ$ (rotating 90° at speed of $30^\circ/\text{sec}$)
Data memory size	50
PC Connectivity *3	No
Pre-setting No.	9 sets
Operation Mode	Peak hold / Track
Bright LED	12 LED (2 Red+10 Green)
Unit Selection	Nm, ft / lb, in / lb, kg / cm, °
Head Type	Interchangeable Head
Size of Head of End Fitting	9x12 mm / 14x18 mm
Axial Distance	17,5 / 25
Gear Teeth	52
Button	5
Battery *4	AA x 2
Operating Temperature	$-10^\circ\text{C} \sim 60^\circ\text{C}$
Storage Temperature	$-20^\circ\text{C} \sim 70^\circ\text{C}$
Humidity	Up to 90% non-condensing
Drop Test	1 m
Vibration Test *5	10G
Environmental test *6	Pass
Electromagnetic compatibility test *7	Pass

Note: Accuracy is guaranteed from 20% to 100% full scale.

Note:

*1: The accuracy of the readout is guaranteed from 20% to 100% of maximum range ± 1 increment. Calibration point is at the middle line of the five grip lines on the rubber handle. For maintaining accuracy, calibrate the wrench at regular intervals (1 year recommended).

*2: The angle accuracy is guaranteed at $\pm 2^\circ$ when rotating wrench to 90° at speed of $30^\circ/\text{sec}$. The maximum measured angle is 999° .

*3: Use a special designed cable (accessory) to upload record data to PC.

*4: Two AA batteries (Toshiba carbon-zinc battery)

*5: Horizontal and vertical test

*6: Environmental test:

- Dry heat
- Cold
- Damp heat
- Change of temperature
- Impact (shock)
- Vibration
- Drop

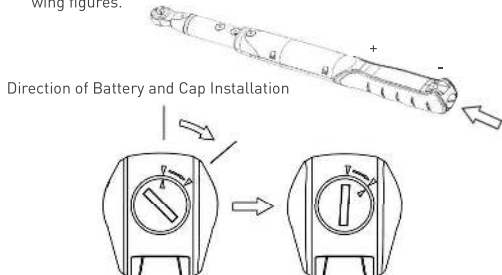
*7: Electromagnetic compatibility test:

- Electrostatic discharge immunity (ESD)
- Radiation susceptibility
- Radiation emission

BEFORE USING THE WRENCH

BATTERY INSTALLATION

- Remove the battery cap.
- Insert two AA batteries matching the $\pm$ polarities of the battery to the battery compartment.
- Replace the battery cap and rotate it tightly according to the following figures.



POWER ON AND AUTO ZERO RESET

- Set the wrench horizontally on a level surface and let it sit without touching it, then gently press **C** to power on the digital torque-angle wrench.
- After power on, auto zero-reset will be processed. In torque mode, it does zero-reset on torque measurements; in angle mode, it does zero-reset on angle measurements.
- In torque mode, a default torque screen will show on LCD **2500** 
- In angle mode, the LCD will flash first (zero-reset) and then a target angle screen will show. 

ATTENTION:

- If **Err** is appeared during power-on process, that means this wrench has ever been applied more than 110% of torque of the spec.
- When using the wrench in "ANGLE" mode the wrench must be placed flat (horizontally) on table or workbench before any attempt is made to change values or to power up the unit. If the user attempts these functions without following the instructions above the unit's display will begin to flash a series of four zeros in the top half of the screen. In order to re-start the unit; press **C**.



ZERO RESET

- If necessary, Zero-reset will guarantee an accurate measurement.
- After power on, **C** button is for zero reset.
- Usually press **C** to zero reset the digital torque-angle wrench before using the wrench.
- In angle mode, keep the wrench steady without any disturbance and press **C** to do zero-reset.
- In torque mode, if an external force is applied to the torque wrench during zero-reset period, an initial torque offset error will occur.

AUTO POWER OFF

- The wrench will auto power off after about 2 minutes idle for power saving. Press **C** to power on the wrench again.

CAUTIONS:

During communication period (send appears), the auto power-off function is disabled.

RESET THE WRENCH

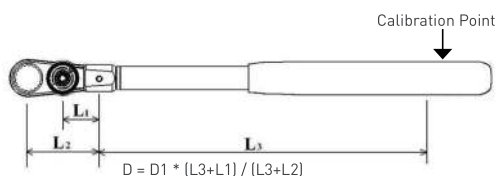
- To reset the wrench, loosen the battery cap then tight it to re-start. After reset, remember to press **C**.
- If the wrench does not function normally or **Err** is appeared, please do reset process to reset the wrench.

LOW VOLTAGE INDICATOR

- If the battery serial voltage is in low, the wrench will display a battery symbol and then turn off. Replace batteries. 

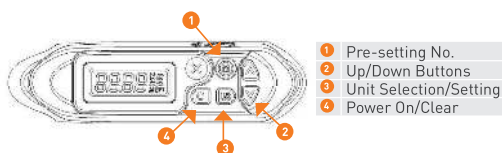
WHEN CHANGING THE TYPE OF HEAD

- If you use the different head of the wrench, the reading on the display will be different for the different length of the head. Please refer to the following explanation.

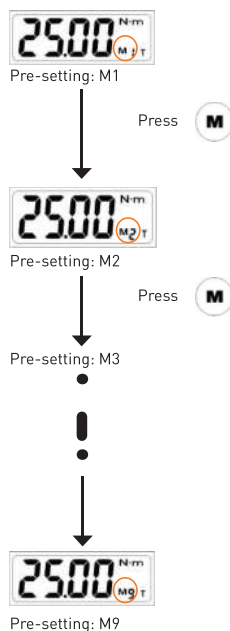


D	The set torque	
D1	The actual torque applied to the nut	
L1	The extended length	
L2	The normal length	
L3	The length from the fitting pin to the calibration point	
PART. NR.	L2	L3
41502135	29 mm	287,7 mm
41502340	40 mm	501,2 mm

SETTING TARGET TORQUE/ANGLE



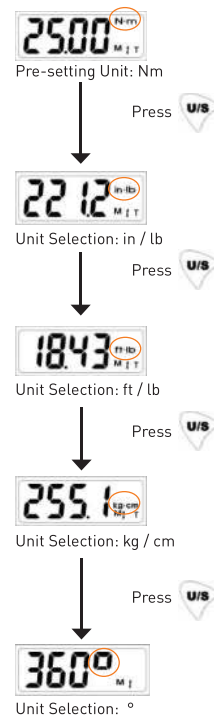
STEP 1: PRE-SETTING NO.



NOTE

1. The maximum capacity for "Pre-setting No." is 9 settings.
2. The "Pre-setting No." cycles from 1 to 9.

STEP 2: UNIT SELECTION



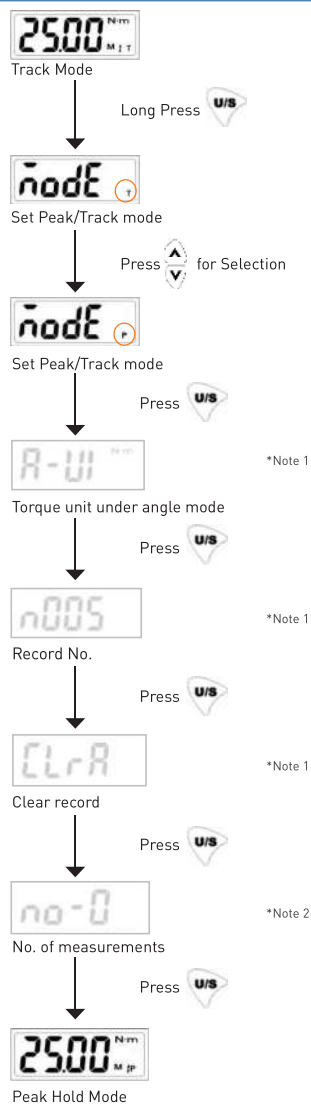
STEP 3: SET TORQUE/ANGLE VALUE



NOTE

1. The „Unit Selection“ is cyclic.

STEP 4: PEAK HOLD /TRACK MODE SELECTION

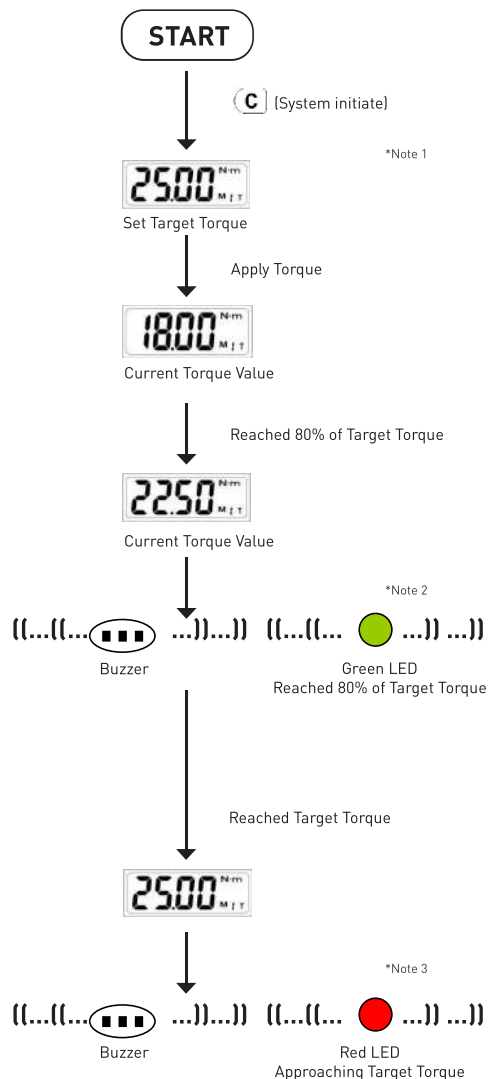


NOTE

1. Please skip this procedure and continue to the next step.
2. Counting record: It counts how many times the wrench has been used, but only taking into count when applying up to 60% of max. torque. This record is not erasable until re-calibration. The max. counting is 65000-time using. For instance, the following figure means the recorded counts is 10100. (no-1 means 10000 times, no-2 means 20000 times reached and so on...)

no-1 $\longleftrightarrow$ 0 100
Auto Change

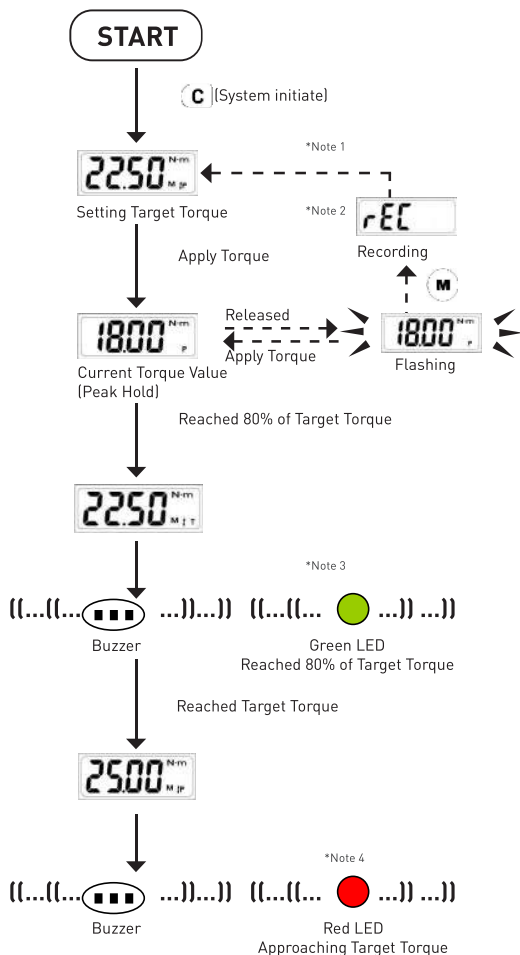
TRACK MODE OPERATION



NOTE

1. If **Er0** appears, it means the wrench has been torqued to more than 110% of maximum torque.
2. When 80% of the target torque is reached, the green LED will begin to flash and the alarm tone will beep intermittently.
3. When 99.5% of the target torque has been reached, the alarm will change to a steady tone and the green LED will stop flashing and stay on. The red LED will also illuminate.

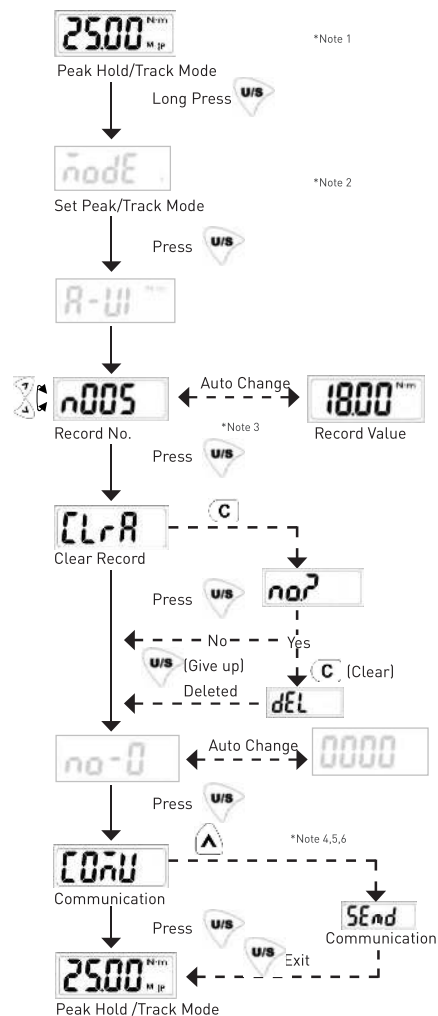
PEAK HOLD MODE OPERATION



NOTE

1. If **Er0** appears, it means the wrench has been torqued to more than 110% of maximum torque.
2. If **Full** appears, it means the wrench's memory is full and no more values can be recorded. Please refer to the "Peak Hold Mode Recorded Value Review" section to clear the memory records.
3. When 80% of the target torque is reached, the green LED will begin to flash and the alarm tone will beep intermittently.
4. When 99.5% of the target torque has been reached, the alarm will change to a steady tone and the green LED will stop flashing and stay on. The red LED will also illuminate.

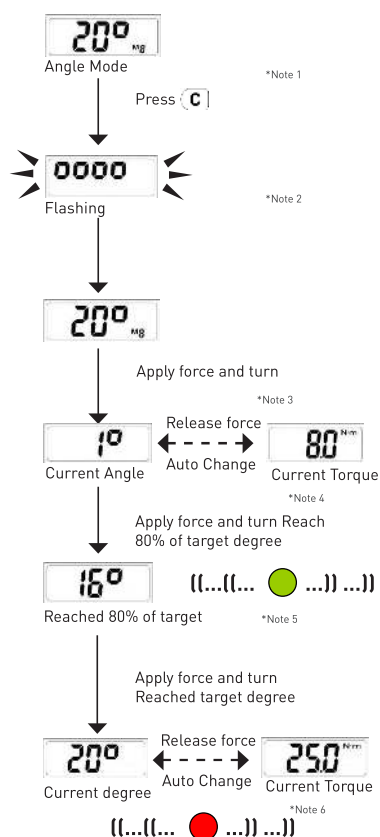
PEAK HOLD MODE RECORDED VALUE REVIEW



NOTE

1. The "Peak Hold" mode recorded value review also can be operated from "Track" mode operation.
2. If you operate in the "Peak Hold" mode, the display will show **node**, please go to next step.
3. If there are no records, it will show **no.0**.
4. This function is not supported on all type of models.
5. Communication mode is for uploading recorded data to a PC.
6. Communication mode is also for calibration of torque wrench. Please contact your local dealer for more information.

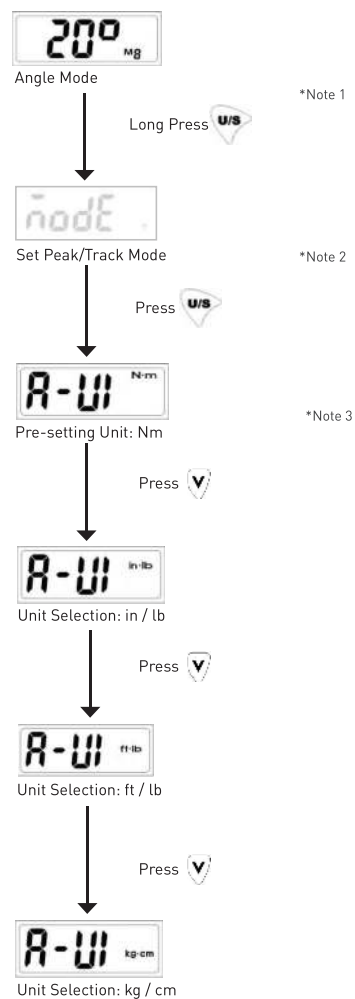
ANGLE MODE OPERATION



NOTE

- When entering angle mode, the unit will be degree.
- When angle is in auto initiate mode, please keep the wrench steady without any disturbance.
- After a short time, the angle function will enter initiate mode and a flashing 0000 will appear.
- When releasing force the wrench in angle mode, the display will show the corresponding torque with flashing.
- When 80% of the target degree is reached, the green LED will begin to flash and the alarm tone will beep intermittently.
- When 99.5% of the target degree has been reached, the alarm will change to a steady tone and the green LED will stop flashing and stay on. The red LED will also illuminate.

TORQUE UNIT SELECTION UNDER ANGLE MODE



NOTE

- The unit setting can also be entered from torque mode.
- Please skip the procedure and go to the next step.
- The unit selection is cyclic.

COMMUNICATION

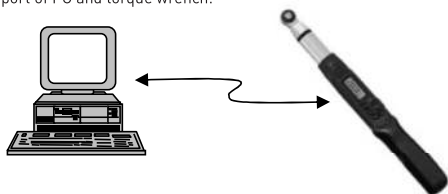


PRECAUTION

- Communication function is only supported on some models. Check the model no. and its specification before using communication function.
- Do not insert the plug of communication cable into torque wrench that does not support communication function.

CONNECTING COMMUNICATION CABLE

Turn off power and then connect the accessory cable between the COM port of PC and torque wrench.



UPLOADING RECORD DATA

- Make sure the connection between PC and wrench is normal.
 - Change the wrench operation mode to "Send". (Please refer to "Peak Hold Mode Recorded Value Review" section)
 - Use PC to start the uploader program.
 - In loader program, first select the correct COM port No.
 - Next, select the file path to save the uploaded data.
 - Finally, press "upload" button to transmit the torque records to PC.
- The uploaded data is then shown on the column and saved in the *.csv file. Use Microsoft Excel to view *.csv file.

CAUTIONS

Refer to the uploader program user guide for the detail operations.

MAINTENANCE AND STORAGE

ATTENTION

One-year periodic recalibration is necessary to maintain accuracy. Please contact your local dealer for calibrations.

CAUTION

1. Over-torquing (110% of Max. torque range) could cause breakage or loss of accuracy.
2. Do not shake violently or drop wrench.
3. Do not use this wrench as a hammer.
4. Do not leave this wrench in any place exposed to excessive heat, humidity, or direct sunlight.
5. Do not use this apparatus in water.[it is not waterproof]
6. If the wrench gets wet, wipe it with a dry towel as soon as possible. The salt in seawater can be especially damaging.
7. Do not use organic solvents, such as alcohol or paint thinner when cleaning the wrench.
8. Keep this wrench away from magnets.
9. Do not expose this wrench to dust or sand as this could cause serious damage.
10. Do not apply excessive force to the LCD panel.
11. Apply torque slowly and grasp the center of the handle. Do not apply load to the end of the handle.

BATTERY MAINTENANCE

1. When the wrench is not going to be used for an extended period of time, remove the batteries.
2. Keep a spare battery on hand when going on a long trip or to cold areas.
3. Do not mix battery types or combine used batteries with new ones.
4. Sweat, oil and water can prevent a battery's terminal from making electrical contact. To avoid this, wipe both terminals before loading a battery.
5. Dispose of batteries in a designated disposal area. Do not throw batteries into a fire.

NOTES



NOTES



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