

INSTRUCTION MANUAL

PRODUCT TYPE

DIGITAL TORQUE WRENCH WITH INTERCHANGEABLE HEAD

MODEL

7314-2030

7338-2135

7312-2200

7312-2340



DEAR USER

Thank you for purchasing this digital torque wrench. This manual will help you to use the many features of your new digital torque wrench.

Before operating the torque wrench, please read this manual completely, and keep it nearby for future reference.

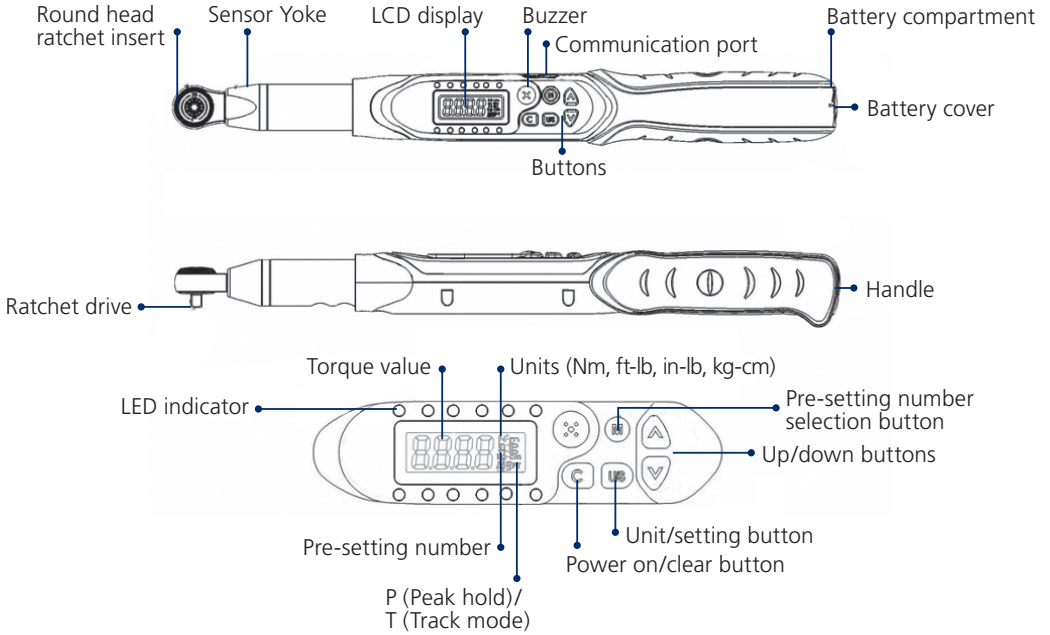
MAIN FEATURES

- Head interchangeable
- Digital torque value readout.
- +/-2% accuracy.
- CW and CCW operation.
- Peak and hold track mode selectable.
- Buzzer and LED indicator for the 9 pre-settable target torques.
- Engineering units (Nm, ft-lb, in-lb, kg-cm) selectable.
- 50 data memory for recall and joint torque auditing.
- Auto sleep after about 5 minutes idle.
- Both AA and rechargeable batteries are compatible.

NAMES AND FUNCTIONS OF PARTS

MODELS

ALL



SELECTION GUIDE

MODEL	SQUARE DRIVE INCHES	MAX. OPERATION TORQUE			
		Nm	ft-lb	in-lb	kg-cm
7314-2030	1/4	30	22.12	265.5	306.1
7338-2135	3/8	135	99.5	1195	1378
7312-2200	1/2	200	147.5	1770	2041
7312-2340	1/2	340	250.7	3009	3469

Torque accuracy

■ 2%-CW / 3%-CCW

Communication

■ No

SPECIFICATIONS

MODEL NO.	MAX. OPERATION TORQUE Nm	SQUARE DRIVE "	MEASURED TORQUE Nm	LENGTH mm
7314-2030	30	1/4	1.5~30	390
7338-2135	135	3/8	6.8~135	410
7312-2200	200	1/2	10~200	520
7312-2340	340	1/2	17~340	640
ALL MODELS				
Accuracy *1	CW: $\pm 2\%$ CCW: $\pm 3\%$			
Data memory size	50			
PC connectivity *2	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	Round head ratchet insert			
Size of head of end fitting (W x H)	9 x 12 mm (7314-2030, 7338-2135) 14 x 18 mm (7312-2200, 7312-2340)			
Axial distance	17.5 mm (7314-2030, 7338-2135) 25 mm (7312-2200, 7312-2340)			
Gear teeth	52			
Battery *3	AA x 2			
Operating temperature	-10°C ~ 60°C			
Storage temperature	-20°C ~ 70°C			
Humidity	Up to 90% non-condensing			
Drop test	1 m			
Vibration test *4	10 G			
Life time *5	10.000 cycle			
Environmental test *6	Pass			
Electromagnetic compatibility test *7	Pass			

Note:

*1: The accuracy of the readout is guaranteed from 20% to 100% of maximum range + /- 1 increment.

The torque accuracy is a typical value.

Calibration line is at the middle line of the dark spot on the rubber handle.

For keeping the accuracy, calibrate the wrench for a constant period time (1 year). And the accuracy is based on the zero degree of offset from perpendicular drive.

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

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

*4: Horizontal and vertical test

*5: One cycle means swing the torque wrench from 0 Nm to maximum range and back to 0 Nm.

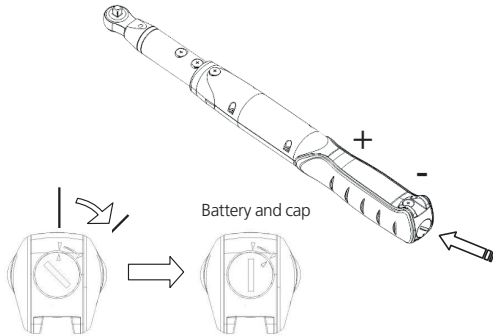
*6: Environmental test:
a. Dry heat
b. Cold
c. Damp heat
d. Change of temperature
e. Impact (shock)
f. Vibration
g. Drop

*7: Electromagnetic compatibility test:
a. Electrostatic discharge immunity (ESD)
b. Radiated susceptibility
c. Radiated emission

BEFORE USING THE WRENCH

Battery installation

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



Power on and resetting the wrench

- Press **C** to power on the digital torque wrench.
- Usually press **C** to reset the digital torque wrench before using it.



Attention

If an external force is applied to the torque wrench during power-on/reset or wake up period, an initial torque offset will exist in the memory.

Activation during sleep mode

- The wrench will auto sleep after about 5 minutes idle for power saving. Press **C** to wake up the wrench during the sleep mode.

Cautions

During communication period (**send** appears), the sleep function is disabled.

Resetting the wrench

- Press **C** **▲** together will reset the wrench.
- If the wrench does not function normally, press **C** **▲** together to reset the wrench.

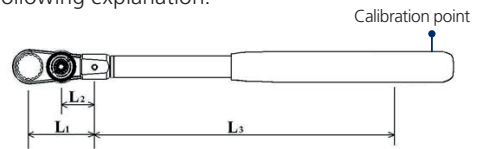
Low battery voltage indicator

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



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.



$$D = D1 \times (L3 + L1) / (L3 + L2)$$

D: The set torque

D1: The actual torque applied to the nut.

L1: The extended length

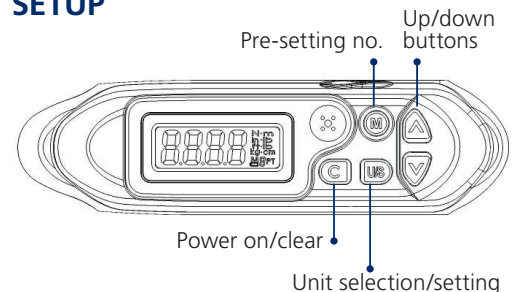
L2: The normal length

L3: The length from the fitting pin to the calibration point.

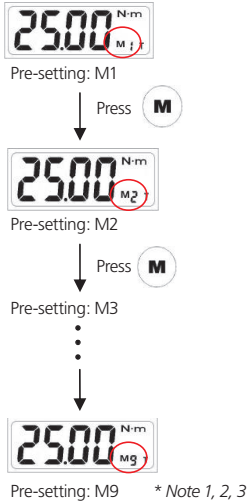
- Reference dimension for each model:

MODEL	L2	L3
7314-2030	29 mm	272.7 mm
7338-2135	29 mm	287.7 mm
7312-2200	40 mm	381.2 mm
7312-2340	40 mm	501.2 mm

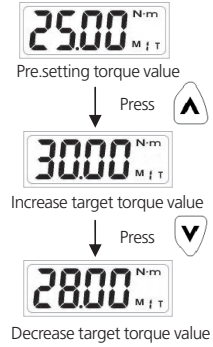
SETUP



1. Pre-setting no.

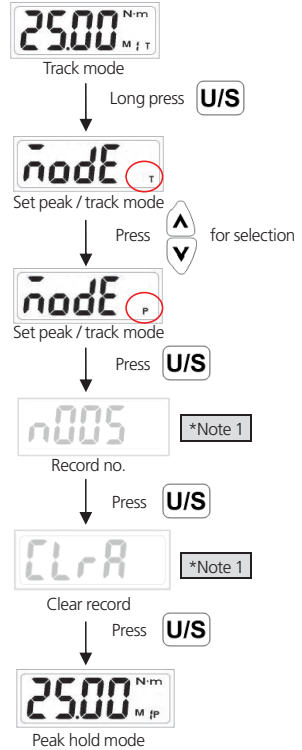


3. Set torque value



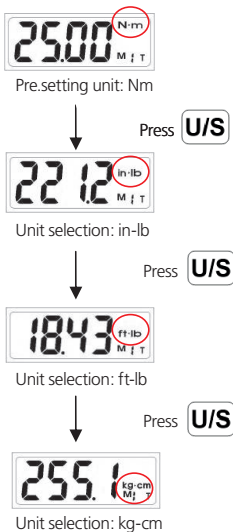
Note:
The "Unit Selection" is cyclic.

4. Peak hold / track mode selection



Note:
Please skip this procedure and continue to the next step.

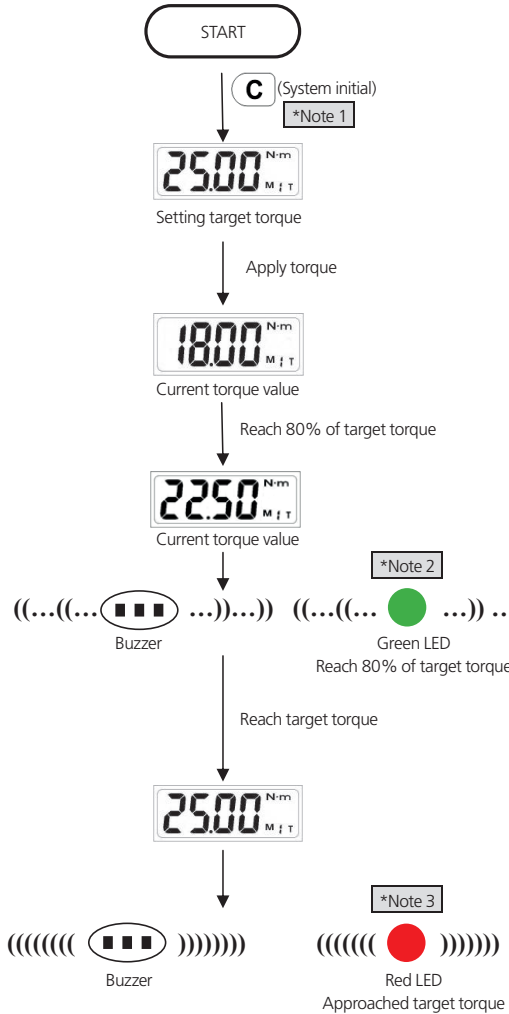
2. Unit selection



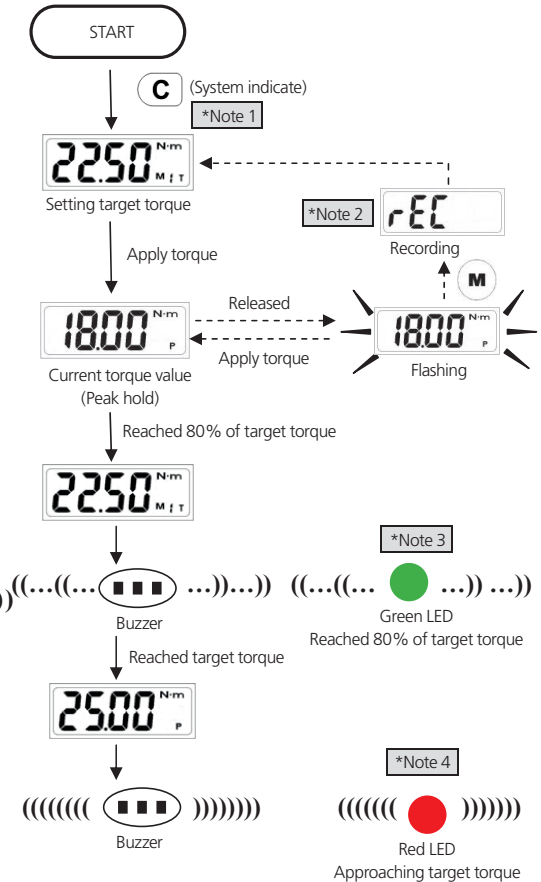
Note:

1. If **Er0** appears, it means the wrench is overloaded. Overload = 110% of maximum torque. Please contact your local dealer for recalibration.
2. The maximum capacity for "Pre-setting no." is 9 sets.
3. The "Pre-setting no." is cyclic.

TRACK MODE OPERATION



PEAK HOLD MODE OPERATION



Note:

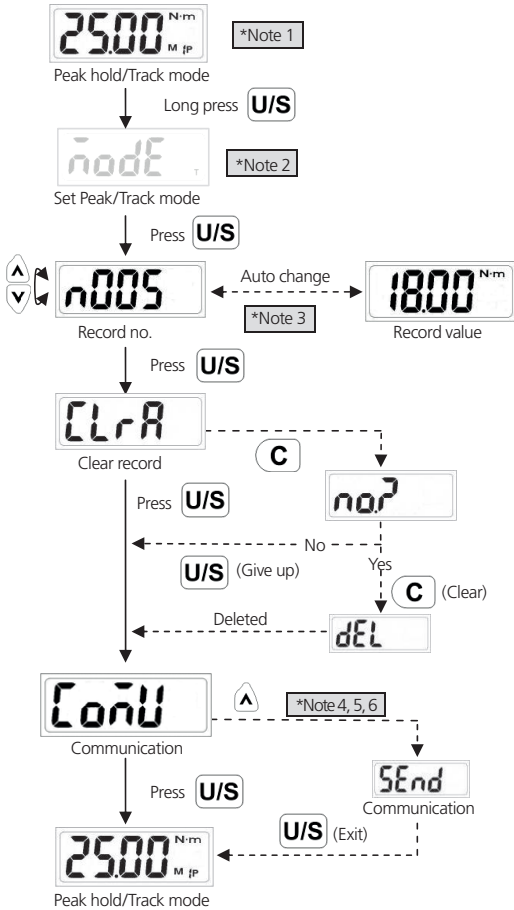
1. If **Er0** appears, it means the wrench is overloaded. Overload = 110% of maximum torque. Please contact your local dealer for recalibration.
2. When 80% of the target torque is reached, the green LED will begin to flash and the alarm tone will beep intermittently.
3. When the target torque is approached, the alarm will change to a steady tone and the green LED will stop flashing and stay on. The red LED will also illuminate.



Note:

1. If **Er0** appears, it means the wrench is overloaded. Overload = 110% of maximum torque. Please contact your local dealer for recalibration.
2. If **Full** is appeared, that means the wrench's memory is full and the next value record can not be written in. Please refer 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 the target torque is approached, 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 **nonE**, please go to next step.
3. If there are no records, it will show **nonE**.
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.

COMMUNICATION



Precaution:

1. Communication function is only supported on some models. Check the model no. and its specification before using communication function.
2. 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.
- Press **C** **▲** together to reset the wrench.
- Change the wrench operation mode to "Send". (Refer to "Peak Hold Mode Recorded Value Review" section).
- Use PC to start the uploader program.
- In uploader 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.



Caution:

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 lose 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

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