

TOPTUL®
PROFESSIONAL HAND TOOLS

Digital Torque / Angle Adapter USER MANUAL



DTA-135A4
DTA-200A4
DTA-340A4

Operation Instruction:

Before operate the torque-angle adapter, please read this manual thoroughly and retain it for future reference.

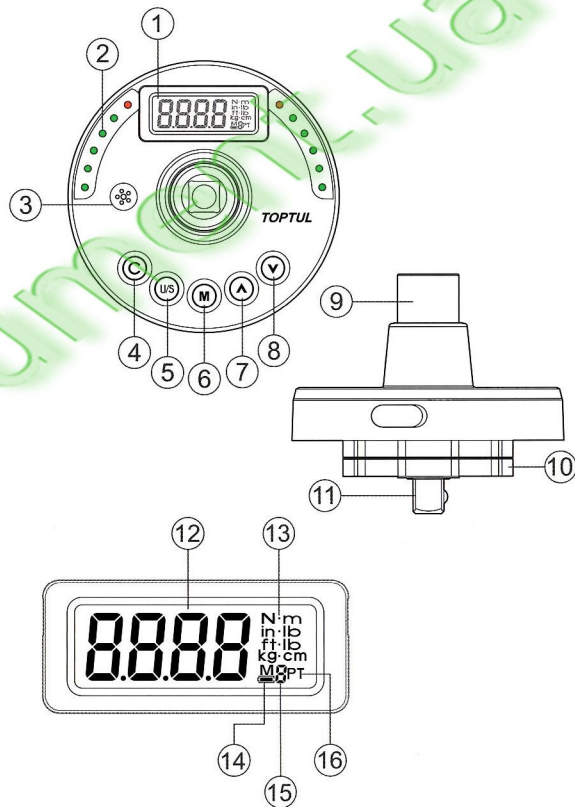
Model

Item No.	Square Drive	Length (mm)	Torque Range
			Degree
DTA-135A4	1/2"	80	0° - 999°
DTA-200A4	1/2"	80	0° - 999°
DTA-340A4	1/2"	80	0° - 999°

Item No.	Torque Range			
	Nm	Ft-Lb	In-Lb	Kg-cm
DTA-135A4	6.8 - 135	5.0 - 99.5	60 - 1195	69 - 1378
DTA-200A4	10 - 200	7.4 - 147.5	88 - 1770	102 - 2041
DTA-340A4	17 - 340	12.5 - 250.7	150 - 3009	173 - 3469

Main Product Feature

1. Digital LCD Display
2. LED Indicator
3. Buzzer
4. Power On / Clear Button
5. Unit / Setting Button
6. Pre-Setting Number Selection
7. Increase Button
8. Decrease Button
9. Square Driver
10. Battery Cover
11. Adapter
12. Torque Value Indicator
13. Torque Unit Indicator: N.m / in.lb / ft.lb / kg.cm / Degree
14. Battery Indicator
15. Memory Number
16. Peak Hold / Track Mode



Product Specifications

Torque Accuracy ①	CW $\pm 3\%$ / CCW $\pm 4\%$
Angle Accuracy ②	$\pm 2^\circ$ (rotating 90° at speed of $30^\circ/\text{sec}$)
Storage Memory	50 Readings
Pro-Setting No.	9 Set
Bright LED	12 LED (2 Red + 10 Green)
Operating Mode	Peak Hold Mode / Track Mode
Unit Selection	Nm, Ft-Lb, In-Lb, Kg-cm, Degree
Battery	1.5V AAA x 2 pcs
Battery Life ③ (Continuous Operation)	24 Hours
Working 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
Auto Shut Off	2 Minutes (when not in use)
Drop Test	1 M
Vibration Test ④	10 G
Environmental Test ⑤	Pass
Electromagnetic Compatibility Test ⑥	Pass

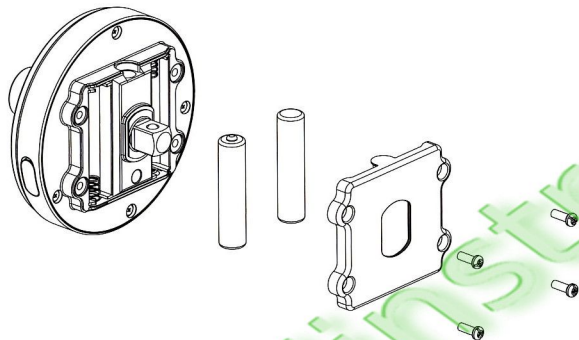
NOTE:

- 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 point is at the middle line of black circle area on the rubber grip. For keeping the accuracy, calibrate the torque-angle adapter for a constant period time (1 year).
- 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 two AAA batteries.
(Tested condition: Toshiba carbon-zinc battery.)
- ④ Horizontal and vertical test.
- ⑤ Environmental test:
 - a. Dry heat
 - b. Cold
 - c. Damp heat
 - d. Change of temperature
 - e. Impact (shock)
 - f. Vibration
 - g. Drop
- ⑥ Electromagnetic compatibility test:
 - a. Electrostatic discharge immunity (ESD)
 - b. Radiated susceptibility
 - c. Radiated emission

Before Using the Adapter

A. Battery Installation

1. Loosen the screw of the battery cap.
2. Install two AAA batteries matching the +/- polarities of the battery to the battery compartment.
3. Fasten the screw of the battery cap.



B. Power On and Auto Zero Reset the Adapter

- Set the adapter horizontally on a level surface and let it sit without touching it, then gently press **(C)** to power on the digital torque-angle adapter.
- 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, first is torque zero-reset and then a target torque screen will show.



- In angle mode, it first do several seconds of angle-zero-reset and then a target angle screen will show.



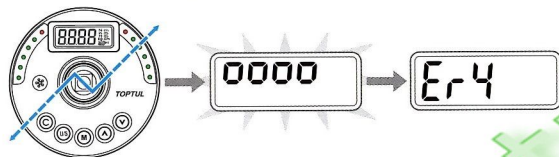
- If it takes too long in angle reset, press **(C)** will perform reset again.

ATTENTION:

1. If **Er0** is appeared during power-on process, that means this adapter has ever been applied more than 110% of torque of the spec. The accuracy of torque may be lost.

2. IMPORTANT!

- During angle reset, keep the adapter still and never shake, vibrate or even touching the adapter.
- If the adapter is moving again and again, the zero reset will not stop. Finally, **Er4** will be shown.

**NOTE:**

In angle mode, if the adapter does not reset successfully for a period of time, **Er4** will be shown. Press **Ⓢ** to do zero-reset again. Notice that during resetting process, never vibrate or shake the meter. Keep it rest.

C. Zero Reset Mode

- Press **Ⓢ** for zero reset.
- Usually press **Ⓢ** to zero reset the digital torque-angle adapter before using the adapter. It will guarantee a better accuracy.
- In angle mode, please keep the adapter steady without any disturbance and press **Ⓢ** to do zero-reset.
- In torque mode, if an external force is applied to the torque adapter during zero-reset period, an initial torque offset error will occur.

D. Auto Power Off Mode

The adapter will auto sleep after about 2 minutes idle for power saving. Press **Ⓢ** to wake up the adapter during the sleep mode.

E. Reset the Adapter

- To reset the adapter, remove battery and re-install it.
- If the adapter does not function normally or **Er5** appears, please go through the reset process to reset the adapter.

F. Low Battery Voltage Protection

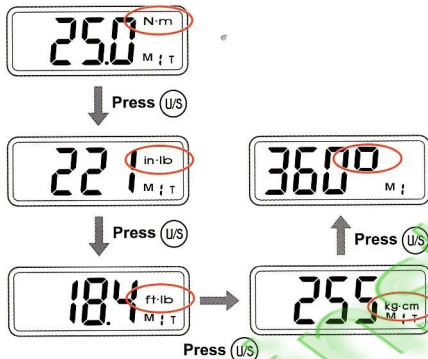
If the battery voltage is too low, the meter will display a battery symbol and then turn off. Replace batteries.



Pre-Set Torque or Angle Values

(Programming of up to 9 Set of Target Torque Value, M1 - M9)

STEP 1: Without applying forces, press (U/S) to select the torque unit (Torque Mode) or "°" (Angle Mode).



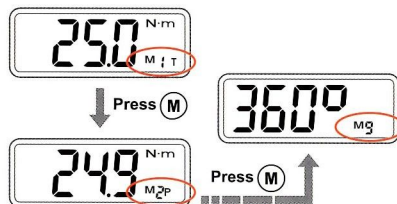
STEP 2: Set target value, press (▲) the increase key or (▼) the decrease key to adjust the value.



NOTE:

That the target value will be saved automatically with the current M number discarding torque or angle.

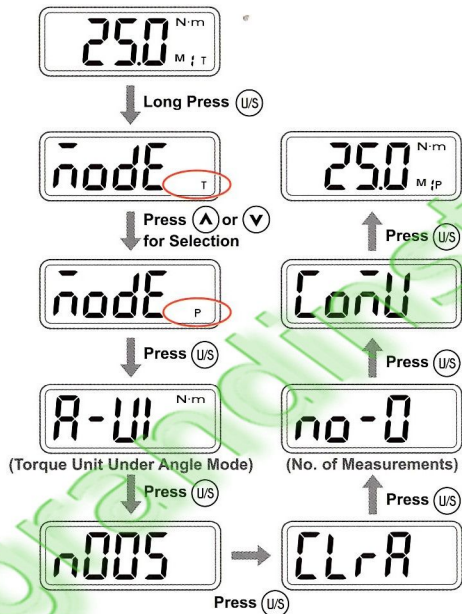
STEP 3: Press (M) to select the memory location of preset target torque / angle value (M1 - M9).



STEP 4: Press C to zero-reset the adapter. (Suggest)

STEP 5: Set torque operation mode.

1. Long press U/S to enter the torque operation setting mode.
2. Press A the increase key or V the decrease key to selection operation mode. (Peak Hold Mode / Track Mode)
3. Press U/S 6 times to return back the operation interface.



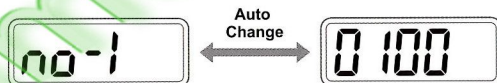
NOTE:

Counting record: This feature counts how many times the adapter has been used, but only counts when applying up to 60% of maximum torque.

This record is not erasable until re-calibration.

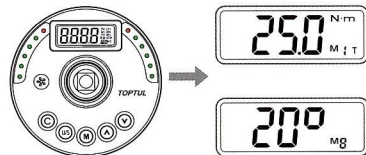
The feature will count up to 65,000 measurements.

Reading the number of measurements, the following figure means the recorded count is 10100. (No-1 means 10000 times, No-2 means 20000 times reached and so on...)

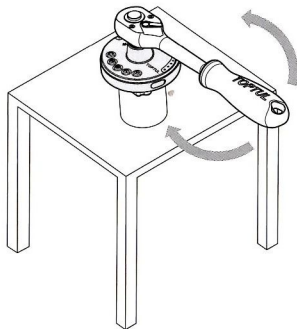


General Operating Instruction

- Before use the digital torque-angle adapter, make sure there is no any input force imposed on the device. Then press C to power on the digital torque-angle adapter.
- The LCD Display show the target torque or angle value.




- Select the correct size of ratchet and hand socket to install on the square driver of torque-angle adapter.
- The operation requires a steady and horizontal force input.
- Rotate the adapter clockwise or counterclockwise.

**NOTE:**

- There are 6 LEDs to indicate the current torque or angle reaching 80%, 85%, 90%, 95%, 97.5% and 100% of target torque / angle.




- There is also a buzzer to indicate the reaching level of target value. Interval sound means it reaches over 80% and long sound means it reaches over 100% of target value.


((...((......)))...)) ---> Over 80%
Buzzer

((((()))))) ---> Over 100%
Buzzer

A. Operation Mode - Track Mode

STEP 1: Without applying torque, press  to power on or system initial the digital torque-angle adapter.

NOTE:


If  is appeared, that means this adapter has ever been applied more than 110% of torque of the spec.


STEP 2: Press  to select the preset target torque value.

STEP 3: In Track Mode, if a force is applied on adapter, LCD Displays and tracks the current torque value.

STEP 4: After releasing force, the LCD value will return to target setting view.

START USE

Press  to power on or system initial.

Press  to select the preset target torque.



Release Force



Apply Torque



Apply Torque

B. Operation Mode - Peak Hold Mode

STEP 1: Without applying torque, press **(C)** to power on or system initial the digital torque-angle adapter.

NOTE:

If **Err0** is appeared, that means this wrench has ever been applied more than 110% of torque of the spec.

STEP 2: Press **(M)** to select the preset target torque value.

STEP 3: Apply torque, In Peak Hold Mode, LCD Displays the maximum torque value.

Stop to release the input force when target torque is reached, the LCD Display will begin flash and display the maximum number of output torque.

1. Press **(M)** to record the operating torque value.

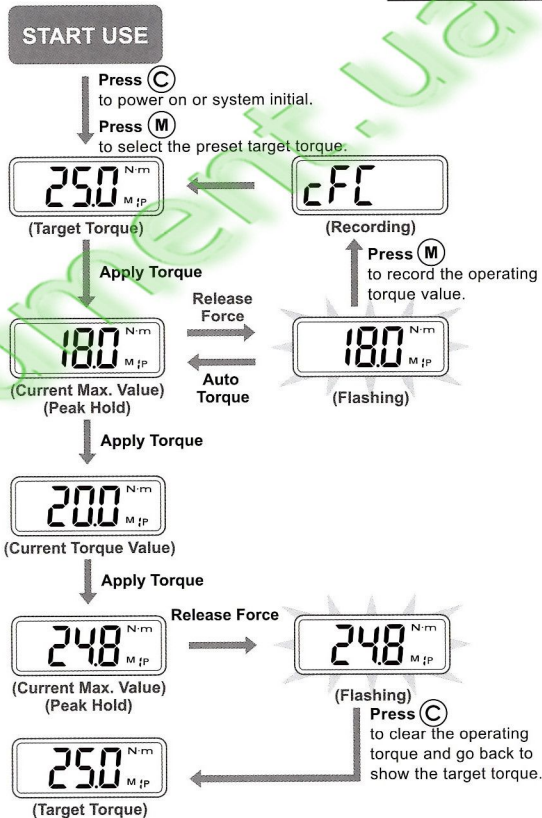
NOTE:

If **Full** is appeared, that means the adapter'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.

2. If don't need to record any torque value, pressing **(C)** will clear the maximum torque and go back to show the target torque.

STEP 4: After releasing force, the LCD shows the maximum value. (Flashing)

STEP 5: Press **(C)** to clear the operating torque and go back to show the target torque.



C. Operation Mode - Angle Mode

STEP 1: Without applying torque, press **(C)** to power on or system initial the digital torque-angle adapter.

STEP 2: Press **(M)** to select the preset target angle value.

NOTE:

1. When entering angle mode, the unit will be degree.
2. When angle is in auto initiate mode, please keep the adapter steady without any disturbance.
3. After a short time, the angle function will enter initiate mode and a flashing **0000** will appear.

STEP 3: Apply force and turn.

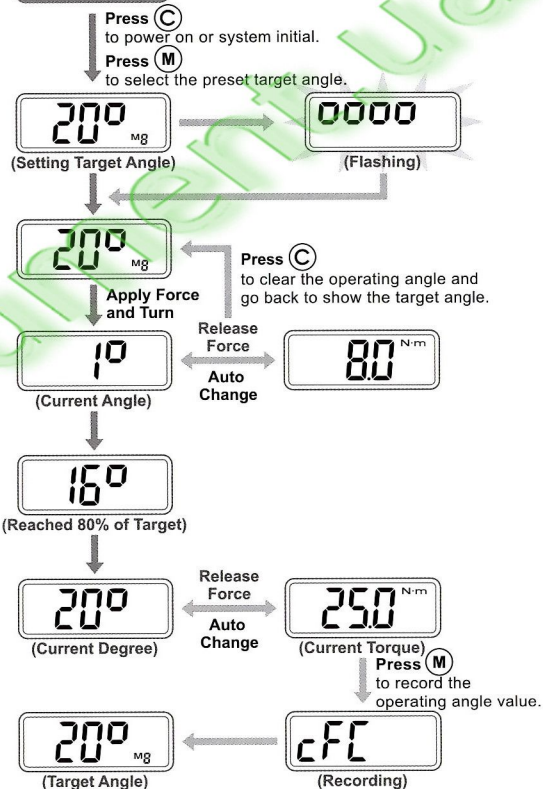
Release the input force when target degree is reached, the LCD Display will show the corresponding torque with slashing.

STEP 4: Press **(C)** will clear the maximum angle and go back to show the target angle, or press **(M)** will record the maximum angle, then clear it and go back to show the target angle.

NOTE:

In angle mode, if the adapter rotates too fast, **Er--** will be shown. Do press **(C)** to zero reset the adapter.

START USE



D. Torque Unit Selection Under Angle Mode

STEP 1: Long press (U/S) to enter the Peak Hold / Track mode setting interface.

NOTE:

The unit setting can also be entered from torque mode.

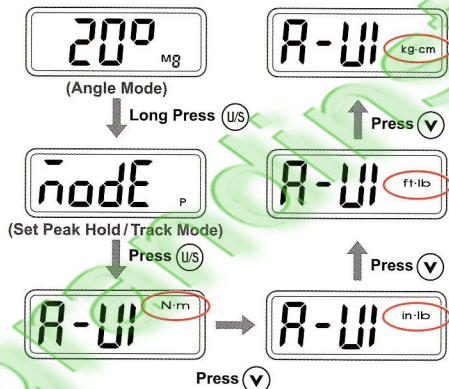
STEP 2: Press (U/S) to enter the torque unit under angle mode.

STEP 3: Press (▲) the increase key or (▼) the decrease key to set measurement unit.

NOTE:

The unit selection cycles through all options.

STEP 4: Press (U/S) 5 times to return back the operation interface.



E. Peak Hold Mode Recorded Value Review

STEP 1: Long press (U/S) to enter the Peak Hold / Track mode setting interface.

NOTE:

The "Peak Hold" mode recorded value review also can be operated from "Track" mode operation.

STEP 2: Press (U/S) to enter the torque unit under angle mode.

STEP 3: Press (U/S) to enter the recorded value review mode.

STEP 4: Press (▲) the increase key or (▼) the decrease key to check the stored torque values at each memory location. (n001-n050)

NOTE:

If the record is empty, it will show "nonE".

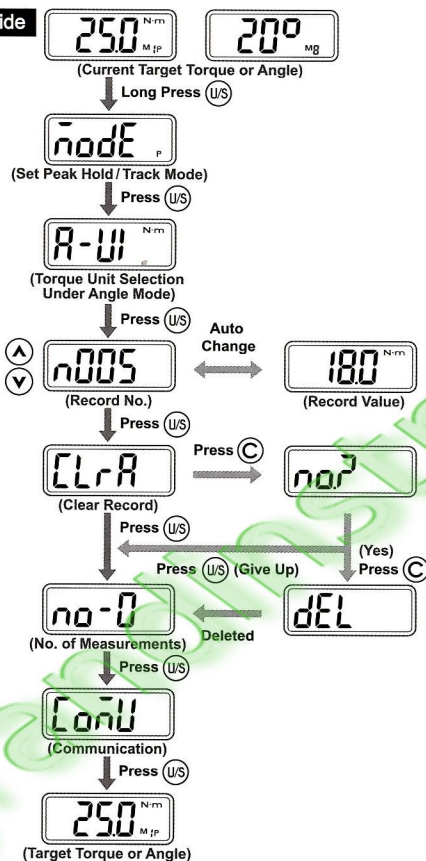
STEP 5: Press (U/S) to reach "CLrR" clear record mode.

1. Press (C) and "n0P" is appeared and ready to delete the record data.
2. Press (C) LCD Display will display "dEL", or press (U/S) to give up the procedure of del.
3. Press (U/S) to enter to see the No. of measurements.

STEP 6: Press (U/S) to enter the communication mode.

NOTE: TOPTUL DTA-135A4 / DTA-200A4 / DTA-340A4
Do Not equipped with communication mode.

STEP 7: Press (U/S) to return back operation interface.



Cautions for Use

- Before operate the digital torque-angle adapter, please read this manual thoroughly and retain it for future reference.
- One-year periodic re-calibration is necessary to maintain accuracy. (Please contact your local dealer for calibrations.)
- Do not use the torque adapter when it is shut off.
- Do not press any key when apply torque on the torque adapter.
- **Never** use the digital torque adapter to loosen the fasteners.
- Apply torque slowly and grasp the center of the handle. Do not apply load to the end of handle.
- Over-torque (110% of Max. torque range) could cause breakage or lose accuracy.
- Do not use sockets, adapters or other accessories showing wear or cracks, it may result in damages to the torque adapter or may lead to injury.
- This torque adapter is not an insulated device. Direct contact with electricity power sources may cause electrical shock and serious injuries.
- Do not shake violently or drop adapter.
- Do not leave this adapter in any place exposed to excessive heat, humidity, or direct sunlight.
- Do not use this apparatus in water. (Not waterproof)
- If the adapter gets wet, wipe it with a dry towel as soon as possible. The salt in seawater can be especially damaging.
- Do not use organic solvents, such as alcohol or paint thinner when cleaning the adapter.
- Keep this adapter away from magnets.
- Do not expose this adapter to dust or sand as this could cause serious damage.
- Do not apply excessive force to the LCD panel.
- When the adapter is not used for an extended period of time, remove the battery.
- 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.