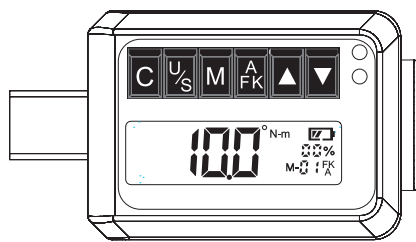




Operator's Manual

GTA - Digital Angle Torque Adapter Series



CAUTION:

User Must Read and Understand the Operator's Manual. Save These Instructions For Future Reference.

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5. Product Functions

The function panel have 6 buttons, the function is as follow:



| Button | Function |
|--------|--------------------------------------|
| C | Power & Reset |
| U/S | Unit Selection |
| M | Memory Selection |
| F/K/A | Mode Switch A-Mode (Angle series) |
| ▲ | Number Increasing (UP) |
| ▼ | Number Decreasing(DOWN) |

5.1 Power and Reset

Power ON Press the C button to turn on the wrench. Next, the backlight comes up, and all the text on the LCD flashes. After displaying 0000 from left to right, the wrench enters into operation mode.

Angle series
The adapter horizontally set, press the C key to boot, backlit LCD text full flash, from left to right shows 0000, the adapter automatically detects whether there is to stand still, if such as not standing, LCD from left to right continuous display 0000, until the adapter is completely static, the four 0 at the same time display three times, enter the operating mode.
When this product is used for the first time, it will display the product's maximum operating value after entering the operating mode. The units are preset as N·m, the memory will display the first set, the mode will be tracking mode T, and the battery scale will show the voltage detected at that time (all 30 memory data sets will have the same preset value).

Turn Off : Press C key and hold 3 seconds to switch off.

Clear : Press C key to reset (when device turned on).

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5.2 Unit Switching

This product provides international standard metric units of Nm, metric units of Kg·cm, and British units of lbf·in and lbf·ft. The units will change each time the U/S key is pressed, in the order of Nm, Kg·cm, lbf·in, and lbf·ft; the preset units are Nm.

► Torque unit conversion table

| | lb-in | lb-ft | Nm | Kg·cm |
|---------|-------|-------|-------|-------|
| 1 lb-in | 1 | 0.083 | 0.113 | 1.152 |
| 1 lb-ft | 12 | 1 | 1.356 | 13.83 |
| 1 Nm | 8.851 | 0.737 | 1 | 10.2 |
| 1 kg·cm | 0.868 | 0.072 | 0.098 | 1 |

5.3 Memory Function

All memory data sets are preset as the maximum value. To set a memory value, press the M key, and the digit on the far right of the M-01 display will begin to flash; use ▲ (up) or ▼ (down) to select the memory data set (up and down keys can be held down for continuous increase or decrease). Press the M key after selected, will stop flash and leave the function.

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5.4 (F) Mode/ (K) Mode/(A) Mode (Angle Series)

► **(F) Mode:** (preset as tracking mode at time of first use)
After setting a value (assuming the value is 50Nm), the force applied by the wrench will gradually increase from 0000. When force is applied, the displayed value will change as the user applies different amounts of force; the reading will increase as force increases, and decrease as force decreases. The reading will jump to 50Nm when the user relaxes his grip and lets up.

► **(K) Mode:**

After the value is selected (assuming 50Nm is selected), when the wrench is applied with force, the value increases from 0000 upwards. When the force is applied by the force, the displayed value will change according to the force of the applying force, and after the force is completely stopped, the value is displayed. For the final torque value, flashes for 10 seconds. After 10 seconds, continue to apply the torque value will automatically accumulate (at this time, any action and button are invalid). After 10 seconds, no force will continue to return to the selected value, or press C can be returned to the selected value.

► **(A) Mode (Angle series):**

After setting a degree (assuming is 50°), the force applied by the wrench will gradually increase from 0°. When the force is exerted, the displayed value will change according to the angle of the force applied, and the force will stop completely. The display value is the final angle value and torque value. The angle value and torque value are interactively displayed. Flashing for 10 seconds. Continue to force the angle value within 10 seconds will automatically accumulate (in this case, any action and buttons are invalid). After 10 seconds, no continue to force automatically return to the selected value, if not press C key to clear, then the next time the force is applied, the angle value will continue to accumulate from the previous value, until over the selected value will automatically clears the accumulated value, switch mode and shutdown it also clears the angle accumulated value.

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5.5 Measurement Range Selection

Values can be freely selected as long as force is not being measured or memory selection has not been performed. After completing torque measurement in either mode, the selected value can be displayed.

5.6 ▲ (UP) / ▼ (DOWN) selection

Pressing the ▲ (up) key once will cause the value on the far right to increase by one; pressing the key continuously will cause the value to increase continuously. Pressing the ▼ (down) key once will cause the value on the far right to decrease by one.

5.7 LCD Backlights Warning & Buzzers

(There will be a beep each time a key is pressed.)

► In Track mode, the two LED light will function as green and red. Assume that the torque value is set at 20Nm. When the user starts applying force to the wrench, the value changes from 0000. When the force reaches 80% of the set value, the green light starts to flash, and the buzzer starts to sound. When the torque value approaches the set value, the green light flashes faster and the buzzer sounds faster. When the force reaches 100% of the set value, the green light comes up permanently, and the buzzer sounds continuously. When the force exceeded the set value(101%) , the red light comes up, and the buzzer continues to sound. The value decreases when the force applied to the wrench is decreased.

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Dear customer,

We appreciate your support purchasing our product – digital torque adapter. In order to learn the advantages of the product well, please kindly read the instruction carefully before you adjusting to any settings. Also please keep this manual for your reference in the future.

1. Product Overview

As a result of torque measurement and calibration requires strict certification, torque instruments must possess good temperature, precision, and resolution capabilities, and must also have the ability to correct for disturbances (ESD and EMI). And while the characteristics of peripheral components must meet specification requirements, measurement chip specifications must also meet requirements. Because of this, the simplification of peripheral passive elements can enable an instrument to accurately measure torque values, which will not only save cost, but also improve maintenance and assembly quality, and lessen the chance of damage to the used objects.

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2. Product Features

Simple multifunctional operation, vibration resistance, can preset torque value, unit switching, mode switching, memory & storage, digital up & down increments, power-saving mode, LED flashing & audible alarm, etc...

2.1 Digital torque, angle degree and default value display.

2.2 LCD backlight display.

2.3 Can be used in both clockwise and counterclockwise directions.

Accuracy: CW±2% (clockwise) CCW±3% (counterclockwise)

(Angle accuracy : ±2° (Angle series))

2.4 Can store 30 memory default values.

2.5 Power saving mode (enters power-saving mode after 2 minutes).

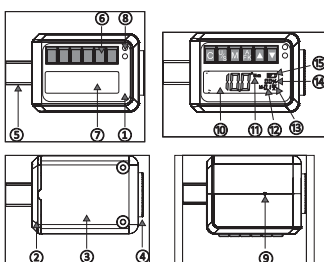
2.6 Have buzzer and LED backlight indicators.

2.7 Low voltage detector (reminds user of battery life).

2.8 Unit : Nm/kgf·cm/lbf·in/lbf·ft

Function and Name for Each Parts

- | | |
|-----------------------------|------------------------------|
| ① Upper Cover | ⑩ Unit display |
| ② Down Cover | ⑪ Memory group display |
| ③ Battery cover | ⑫ F/K/A(Track/Peak/Angle) |
| ④ Extension bar square hole | (A mode - Angle series only) |
| ⑤ Extension bar square head | ⑬ Percentage display |
| ⑥ Function Button | ⑭ Battery life display |
| ⑦ LCD display monitor | |
| ⑧ LED indicators. | |
| ⑨ Buzzer | |
| ⑪ Torque value display | |



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3. Technical Specifications

| Model Type | General Series | Angle Series |
|-------------------------------------|------------------------------------|--------------|
| Torque Accuracy*1 | CW:±1.5% CCW:±2.5% | |
| Angle Accuracy*2 | | ±/- 2° |
| Max. angle measure | | 720° |
| LED Indicator | 2 LED(1 Green + 1 Red) | |
| Operation Modes | Track(F) / Peak hold(K) / Angle(A) | |
| Unit | Nm, kgf·cm, lbf·in, lbf·ft | |
| Battery life (Continuous operation) | 48 hrs. | |
| Battery life (Standby Mode) | 1 year | |
| Humidity | Up to 90% non-condensing | |

| | |
|-----------------------|-------------|
| Memory Capacity | 30 Sets |
| Operating Temperature | -10°C ~60°C |
| Storage Temperature | -20°C ~70°C |
| Drop Test | 1m |
| Vibration Test | 10 G |
| Life Test | 10000 cycle |
| Environmental test | Pass |
| EMC Test | Pass |

*1 Torque Accuracy : According to ISO6789:2003, a specified measuring range from 20% to 100% of the maximum torque value of the respective tool.
*2 Angle Accuracy : ±1° for 90° rotation at 45°/sec.

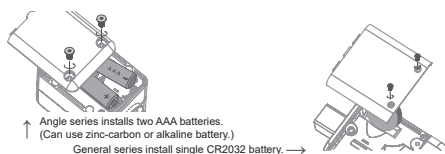
4. Before using the adapter

4.1 Battery installation

4.1.1 Open battery cover.

4.1.2 Insert battery, make sure polarity is correct.

4.1.3 Replace the battery cover.



4.2 Low Voltage Notification

If the system detects a voltage level of less than 2.3V, a battery icon will appear at the upper right corner of the screen, and the system will shut down a few seconds later.



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► The Peak Mode is similar to the Track mode. However, in Peak Mode, the LED light and the buzzer stops after force applied to the wrench is completely removed.

► In Angle mode (Angle series), the two LED light will function as green and red. Assume that the set angle value is 20°. When the user starts applying force to the wrench, the value changes from 0°. When the force reaches 80% of the set value, the green LED starts to flash, and the buzzer starts to sound. When the angle value approaches the set value, the green LED flashes faster and the buzzer sounds faster. When the force reaches 100% of the set value, the green LED light up permanently, and the buzzer sounds continuously. When the force exceeded the set value(101%), the red LED light up, and the buzzer continues to sound. When force applied stop, the LED lights and the buzzer stop.

5.8 LCD Percentage Display

The display generally shows 0%.

► In Track mode, assume that the user's set value is 50Nm. When force applied as the torque value increase from 0Nm to 25Nm, the screen shows 50%, and so on. When force decreased, the torque value decreases. When force applied is stopped, the display will return to the torque setting screen.

► The effects in Peak Mode are similar to what in the Track mode. However, after force applied is stopped, the display shows the percentage of the last torque value, with the highest percentage being 100%.

► In Angle mode (Angle series), assume that the user's set value is 50°. When force is applied such that the angle value increases from 0° to 25°, the screen shows 50%, and so on. After force applied is stopped, the display shows the percentage of the last angle value, with the highest percentage being 100%.

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5.9 Low Voltage Display

The LCD battery display has four increments. Greater or equal to 3V is shown as completely charged; less than 2.8V is shown as 3 increments, less than 2.6V is shown as 2 increments, and less than 2.4V is shown as one increment; when there is less than 2.3V, all functions will cease, and the instrument will turn off after the LCD battery indicator flashes for 5 sec.

5.10 Reset Memory Function

Press and hold the C key + ▼ (down) key; after 5 sec., all values stored in memory reset to the preset factory values.



5.11 Backlight Switch

Press the C key + ▲ (up) key to turn the backlight on or off; the backlight is preset as on.



5.12 Reset

In order to make accurate data, press C key each time before using the device. Force state is prohibited to press C key to avoid get the error initial value.

5.13 Power Saving Mode

Enter power-saving mode after 2 minutes without using the device, press C key to wake up.

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5.14 Overload Warning

Switch on or reset when screen continued to appear 110%, it means the device have been forced exceeds the maximum standard torque value 110%, may result in the products' damage or accuracy error.



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6. Maintenance and Precautions

NOTE THE WARNINGS

In order to maintain good accuracy, we recommend that you perform calibration around once each year.

- 6.1 Do not utilize any organic solvents to clean the product, such as: alcohol or paint thinner etc.
- 6.2 Do not place the product nearby any magnetic products.
- 6.3 Do not exert heavy force or pressure on the LCD screen.
- 6.4 Do not use the products as striking tools.
- 6.5 Do not hit the products by using hammer or other tools.
- 6.6 Exceeding the largest standard torque value may result in the products' damage or accuracy error (110%).
- 6.7 Do not use near or place in water.
- 6.8 Please wipe the product clean with a dry cloth, if the product is wet.
- 6.9 Do not place the product in the high temperature and damp environment or do not expose the product to sunlight.
- 6.10 Do not place the product in the full dust or sand environment.
- 6.11 Do not violently shake or drop the product.
- 6.12 Please take out the batteries if the product is not used a long period of time.
- 6.13 Do not throw the batteries into fire, and the batteries have to be recycled.
- 6.14 Please read carefully the operating manual, and then follow the guides of the manual, before using the digital torque adapter.
- 6.15 Shutdown state is prohibited to use.
- 6.16 Do not use the additional tools to extend the length of the handle, such as: iron or plastic pipe.
- 6.17 Do not touch any button when torque is exerted.
- 6.18 Do not use this product on set up an electric items.

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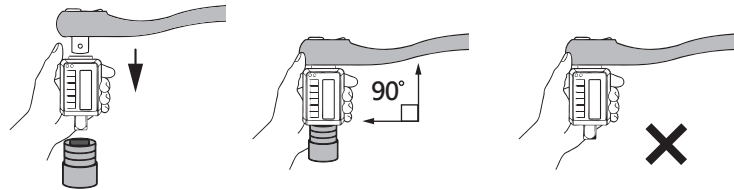
※ Method of Use

■ Digital Torque Adapter

• Please use the correct size of wrench and socket to fit into the both ends of the digital torque adapter, and keep the wrench, digital torque adapter and socket at a mutually vertical state.

• Before using the products, please confirm the wrench, digital torque adapter and socket which is a mutually vertical state, and then you can use the wrench. Next, the torque value will display at digital torque adapter.

• If the wrench, digital torque adapter and socket are not connected or not kept at a mutually vertical state, please do not use the wrench, the situation will cause the digital torque adapter's damage.



P.S: Before completion of the boot process (see section 5.1), do not force in the torque wrench.

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■ Warning Note For Using Batteries

1. Please take out the batteries, if the product is not used a long period of time.
2. Please prepare the more backup batteries, when the product is used in other places without electric power.
3. Do not mix old and new batteries.
4. Do not use the soiled batteries with perspiration and greasiness.
5. Do not throw the batteries at fire, and the batteries have to be recovered.
6. The standard or rechargeable batteries can be used in our products.
7. If the LCD screen cannot display, please check whether the batteries are without electricity, or replace them.

※ Warranty

■ The Standard of Product Warranty

We provide the complete warranty for increasing the product quality and life, as well as provide one year limited warranty with the maintenance of products.

■ Warranty Serial Number

Please consult with the agent or the dealer in local.

■ Product Warranty Limits

During the warranty period, if the product's material or manufacturing process appears any deficiency, it affects the product function (include: Non-human factors or non-resistant external damage). We will provide the maintenance services with free or replace the qualified product (the same specification).



Serial Number imprinted

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■ Exclusions From Warranty

If the product belongs to any of the non-normal conditions following, the product warranty will be terminated. These non-normal conditions will require that customers must pay cost in repairing or materials expenses which are formulated by the agent or the dealer in local. These non-normal conditions are displayed as below:

1. The purchased product is not from the indicated authorized distribution channels, and it cannot give the warranty proof.
2. The product serial number is changed, tore and unclear.
3. The customer does not comply with the user guides, it causes improper use to damage the product. In addition, any damage caused by natural disaster (such as: floods disaster, fires disaster, earthquakes, lightning stroke, typhoons, insect damage), human factors (surface scratching, falling, knocking, thumping and liquid infiltrating) and etc.
4. The surface scratching and abrading of any parts of products is regarded as non-warranty in normal use.
5. The faults of the product are caused by the installed, modified and added with other components without our authorization, or from the abnormality of other equipment.
6. The acceptable product exchange conditions include: "the product cannot be turned on the power", "the buttons cannot be operated", "the LCD is unable to display" and "the function of the product is unavailable". Other situations will be served as maintenance services.

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7. We will provide the same specification or better products to maintain customers' products, and the defective components which are changed will belong to our company unless customers have to establish a contract for retaining these.
8. The product warranty limit excludes damages of the products' appearance and cover.
9. The product warranty limit excludes the products without the authorized distribution channels.
10. The product warranty limit excludes damages of the product transport.
11. The product warranty limit excludes the product faults caused by the abnormality of other equipment.

■ Other Suggestions

Please confirm your product specifications and accessories.

■ Reserved Rights

We will reserve the rights to changing the content of terms, we will post new terms if it has any changes, but we do not inform individual customers.

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