

*1000 Kgf-cm, heavy duty, professional*

# TORQUE WRENCH

Model : TQ-8803



Your purchase of this 1000 Kgf-cm Torque Wrench marks a step forward for you into the field of precision measurement.

Although this METER is a complex and delicate instrument, its durable structure developed. Please read the following instructions carefully and always keep this manual within easy reach.

**OPERATION MANUAL**

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# 1. FEATURES

- \* Professional and Heavy duty torque wrench.
- \* Range : 1000 Kgf-cm, 868 lbf-in, 72.3 lbf-ft, 9807 N-cm, 98.1 N-m.
- \* Unit : Kgf-cm, Lbf-in, lbf-ft, N-cm, N-m.
- \* Auto data hold function to freeze the last measurement reading.
- \* Alarm value setting with beeper sound.
- \* Size of square drive :  
3/8 inch square ( 9.52 mm square ).
- \* LCD display with backlight, easy readout.
- \* Auto shut off circuit to save battery life,
- \* Microcomputer circuit, high performance.
- \* Metallic heavy duty & compact housing case.
- \* Power supply :  
DC 1.5V battery ( UM-4, AAA ) X 4 PCs.

# 2. SPECIFICATIONS

## *2-1 General Specifications*

|                      |  |
|----------------------|--|
| Display              | 57 mm x 25 mm LCD display.   |
| Measurement function | Torque value,<br>Auto data hold,<br>Alarm beeper setting.  |
| Measurement unit     | kgf-cm, lbf-inch, lbf-feet, Newton-cm,<br>Newton-meter.<br>* kgf : Kg-force, lbf : pound-force                                     |
| Function buttons     | 5 buttons :<br>Power button<br>Backlight button<br>Unit button<br>▲ button ( for alarm setting )<br>▼ button ( for alarm setting ) |

|                      |   |
|----------------------|---|
| Sensor               | Exclusive torque sensor.  |
| Circuit              | Exclusive microcomputer LSI circuit.  |
| Data hold            | Freeze the last reading automatically.  |
| Alarm setting        | It can set the alarm force value, when measuring value reach the alarm value the beeper will sound, the LCD backlight will flash too. |
| Zero adjust          | Automatic zero adjustment.  |
| Size of square drive | 3/8 inch square ( 9.52 mm square ).   |
| Power off            | Auto shut off, saves battery life, or manual off by push button.  |
| Power supply         | Alkaline or heavy duty type<br>DC 1.5 V battery ( UM-4, AAA ) x 4 PCs.  |
| Power consumption    | Approx. DC 5 mA ( baklight off ).<br>Approx. DC 13 mA ( baklight on ).  |
| Weight               | 1050 g ( 2.3 LB ).  |
| Dimension            | 450 x 55 x 37 mm<br>( 12.2 x 2.0 x1.8 inch ).   |
| Accessories included | Instruction manual..... 1 PC.<br>Hard carrying case..... 1 PC.  |

## 2-2 Electrical Specifications ( 23 5 °C )

| Display Unit  | Max. Range  | Min. Range | Resolution |
|---|-------------|------------|------------|
| kgf-cm  | 1000 kgf-cm | 3 kgf-cm   | 1 kgf-cm   |
| lbf-in  | 868 lbf-in  | 2 lbf-in   | 1 lbf-in   |
| lbf-ft  | 72.3 lbf-ft | 0.2 lbf-ft | 0.1 lbf-ft |
| N-m   | 98.1 N-m    | 0.2 N-m    | 0.1 N-cm   |
| N-cm  | 9807 N-cm   | 20 N-cm    | 2 N-cm     |
| * kgf : Kg-force, lbf : pound-force, N = Newton<br>* in = inch, ft = feet, m = meter, cm = centimeter |             |            |            |

| Display Unit | Accuracy   |
|--------------|--|
| kgf-cm       | $\pm 2 \% \text{ F.S. ( full scale )}$<br><i>@ From 20% to 100 % of full scale .</i><br><br>$\pm ( 2 \% \text{ reading } + 5 \text{ d } ) .$<br><i>@ 5% to 19 % of full scale.</i> |
| lbf-in       |  |
| lbf-ft       |  |
| N-cm         |  |
| N-m          |  |

*@ Above specification tests under the environment RF Field Strength less than 3 V/M & frequency less than 30 MHz only.*

### 3. FRONT PANEL DESCRIPTION

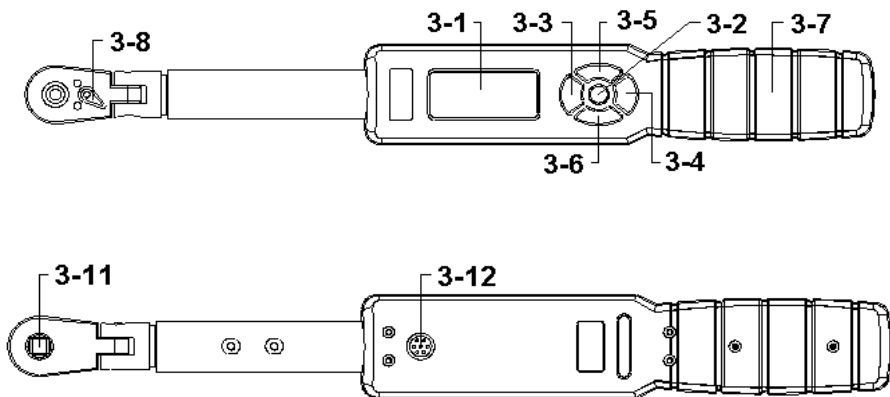
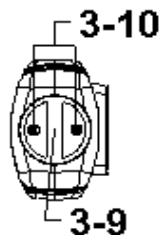


Fig. 1



- 3-1 Display
- 3-2 Power button
- 3-3 LCD backlight button
- 3-4 Unit button
- 3-5 ▲ Button
- 3-6 ▼ Button
- 3-7 Handle
- 3-8 Torque force direction switch
- 3-9 Battery Compartment/Cover
- 3-10 Screws for battery cover
- 3-11 Square drive
- 3-12 Beeper

## 4. MEASURING PROCEDURE

### 4-1 Measurement

1) Power on the meter by pressing the " Power Button " ( 3-2, Fig. 1 ) once, the Display will show zero value and ready for the measurement.

*\* After power on, if press the " Power Button " ( 3-2, Fig. 1 ) once again, the meter will be off.*

*\* The minimum measurement value is 50 kgf-cm (43 lbf-in/3.6 lbf-ft/4.9 N-m/490 N-cm ), if the measurement value less than 50 kgf-cm, the Display will show " 0 " value.*

### 2) Unit Button

After power on, push the " Unit button " ( 3-4, Fig. 1 ) once in sequence to select the measurement unit :

**kgf-cm, lbf-in, lbf-ft, N-cm, N-m.**

*\* After select the desired unit, if power off then power on again, the existing select unit will save into the memory circuit with default.*

3) Set the Torque force direction by slide the " Torque force direction switch " ( 3-8, Fig. 1 ).

*\* Set the direction switch to the left, will make the clockwise direction for the torque force measurement.*

*\* Set the direction switch to the right, will make the counterclockwise direction for the torque force measurement.*

4) Connect the " Square Drive " ( 3-11, Fig. 1 ) to the " Torque adapter " ( optional ) or the measured " Measurement Installation " that intend to measure the torque value.

Use the hand to hold the " Handle " ( 3-7, Fig. 1 ) firmly and rotate the Handle, the Display will show the measurement torque value.

#### **4-2 Auto data hold**

During the measurement, upon Display show the measurement torque value, if release the handle, the last measurement value will freeze on the Display within 10 seconds approximately at the same time the Display will show the " HOLD " indicator.

*\* During execute the " Auto data hold " function, if make new measurement again, the " Hold function " will be disappeared and return to normal measuring screen.*

#### **4-3 LCD backlight ON/OFF**

After power on the meter, if press the " LCD backlight button " ( 3-3, Fig. 1 ) once will turn on the LCD backlight , if press the " LCD backlight button " once again will turn off the LCD backlight .

#### **4-4 Alarm setting**

1) After power on , it press the " ▲ Button or ▼ Button " ( 3-5, 3-6, Fig. 1 ) once or continuously will set the Alarm setting value " .

2) a. The setting Alarm value will save into the memory circuit with default.

b. The " Beeper " ( 3-12, Fig. 1 ) will sound slowly if the the measuring value reach the 90% Alarm setting value.

c. The " Beeper " ( 3-12, Fig. 1 ) will sound quickly if the the measuring value reach the Alarm setting value.



- 4) The LCD backlight will flash for warning if the measuring value reach the Alarm setting value.


***For example :***

- \* *If the Alarm setting value is 500 kgf-cm, the " Beeper " will sound slowly when the measuring value reach to 450 kgf-cm, the " Beeper " will sound quickly when the measuring value reach to 500 kgf-cm.*
- \* *When the measuring value reach to 500 kgf-cm, the LCD backlight will flash for warning too.*

***4-5 Auto power off***

After power on, if do not make any further operation ( not change the Display value or not press any buttons ), then within 3 minutes the meter will power off automatically to save the battery power energy.

## **5. BATTERY REPLACEMENT**

- 1) When the left corner of LCD display show "  ", it is necessary to replace the battery. However, in-spec. measurement may still be made for several hours after low battery indicator appears before the instrument become inaccurate.
- 2) Loose the " Screw of the battery cover " ( 3-10, Fig. 1 ) and take away the " Battery Cover " ( 3-9, Fig. 1 ) from the instrument and remove the battery.
- 3) Replace with DC 1.5 V battery ( UM4/AAA, Alkaline/heavy duty ) x 4 PCs, and reinstate the cover.
- 4) Make sure the battery cover is secured after changing the battery.

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