

# Digital **MEGA** Torque Wrench

**Operation manual**

Please read this operation manual before use

**BIG DAISHOWA SEIKI CO., LTD.**

Thank you for your purchase of **BIG** Digital MEGA Torque Wrench. Please be sure to read this manual before using the product and also keep it in a location where all the operators may consult it in case of necessity.

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### Regarding the safety

In this manual, the following symbol is used to indicate procedures related to the safe use of the product.

Read well the contents of the safety notes and apply correctly those instructions.



This symbol indicates that the wrong handling of the product may cause injuries to the operator or other people and material damages.

# SAFETY NOTES

The following safety notes are arranged in order to use our product correctly and to protect the operator and other people from possible injuries and damages. In order to distinguish the severity of the injuries or damages, the safety notes are divided in two categories: "Caution" and "Warning".

Please be sure to respect the safety notes since any of them contain important safety matters.



**Caution :** This note indicates that the wrong handling of the product may cause material damages.



**Warning :** This note indicates that the wrong handling of the product may cause physical or material damages.



## Warning

### 1. Concerning the product

- ① **Do not disassemble or modify the product.**
  - It may lead to damages, reduced life, functions and safety.
- ② **Do not throw the product into the fire.**
  - The product may explode or generate toxic substances.
- ③ **Use only accessories or optional parts indicated in this manual.**
  - It may cause injuries or accidents.

### 2. Concerning the recharge and the Battery charger

- ① **Use only the recharging device indicated in this manual.**
- ② **Do not use the recharging device outside the indicated power specifications.**
  - It may become extremely hot and start a fire.
- ③ **Do not recharge the product with a temperature under 0°C or above 40°C.**
  - The built-in rechargeable battery may explode or a fire may start.
- ④ **Recharge the product in a well ventilated location.**
- ⑤ **Do not recharge the product if the recharging device or the product itself is covered by a cloth, etc.**
  - The built-in rechargeable battery may explode or a fire may start.
- ⑥ **Remove the recharging device's plug from the power socket when the recharge is finished.**
  - It may start a fire or cause an electric shock.

### 3. Concerning the handling of the product

- ① **Do not use the product or the recharging device under rain, etc or in places wet and humid.**
  - The product may get damaged, emit smoke or cause electric shocks.
- ② **Use the product in a well illuminated location.**
  - Using the product in dark locations may lead to accidents.
- ③ **Do not use or recharge the product in locations with inflammable gases or liquids.**
- ④ **Install the adapter correctly.**
  - It may cause accidents, injuries, product breakages or accuracy problems.
- ⑤ **Do not swing the product around.**
  - It may cause accidents, injuries, the product breakages or accuracy problems.
- ⑥ **Do not use extension pipes to tighten the product.**
  - It may cause accidents, injuries, the product breakages or accuracy problems.
- ⑦ **In case of using the product in elevated locations, take measures against dropping the product.**
  - Dropping the product or the adapter may cause accidents, injuries or breakages.

## SAFETY NOTES



### Caution

#### 1. Concerning the handling of product

- ① Do not use or store the product in the following locations.

- Locations with high humidity and elevated temperature
- Locations with a lot of dust
- Locations with strong vibrations
- Unstable locations
- Locations where water or oil may invade the product
- Locations with strong magnetic fields

- ② Store the product accurately when you do not use it.

- ③ Do not let enter metallic or inflammables objects into the device.

- ④ Do not step on the product or place objects on it.

- ⑤ Do not throw or hammer the product.

#### 2. Recharging and the battery charger

- ① Do not store the product or the battery charger in a location with a temperature above 50°C.

The conditions of the recharging device and of the built-in rechargeable battery may worsen.

- ② Do not handle the battery charger's cable carelessly.

- ① Do not carry the cable around and do not remove the cable from the power socket by pulling it.

- ② Do not use the cable near very hot locations or places with oil or sharp corners.

- ③ Recharge the product in a place where the cable does not get stuck, stepped on or does not get damaged by receiving excessive stresses.

- It may cause electric shocks or short-circuits.

#### 3. Concerning the handling of the product

- ① Use the product only for the applications indicated in this manual.

- ② Do not use the product for operations above its specifications.

- ③ Do not use the product in a cluttered location or working table.

- ④ Do not let other people come close to the operator when using the product.

- ⑤ Do not handle the product in an unnatural posture. Always stabilize your feet and maintain a balanced position.

- ⑥ Always maintain the grip clean and dry. Do not let oil, grease adhere to the grip.

- ⑦ Always inspect the wrench before using it. Before the use, inspect each part to check if they present dents or not and also check if the product and its functions work correctly.

## SAFETY NOTES REGARDING THE USE OF THE PRODUCT

Respect the following notes for a safe and correct use of the product.

Before using the product perform a starting inspection and control the settings.

Be aware that using the product in places with strong magnetism may damage it.

Be aware that if the product comes in contact with water or oil, it may get damaged or start a fire.

Dropping or hitting the product may cause breakages or damages.

Do not use the product as a hammer or a lever.

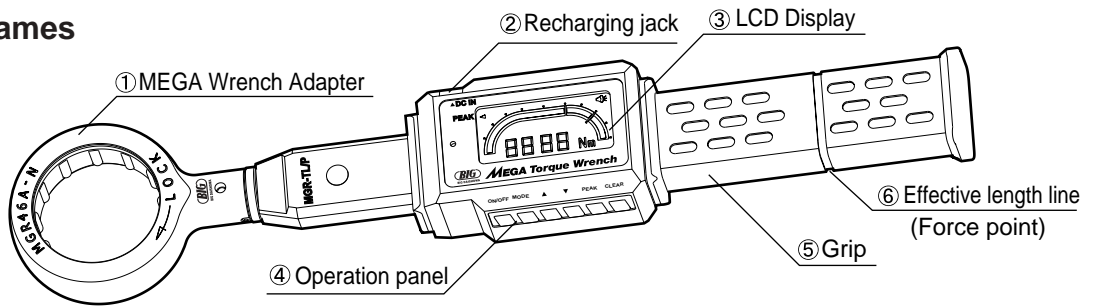
When tightening, hold the grip firmly on the valid line (force point) and apply a perpendicular force to the torque wrench (up and down or right and left).

It is recommended to perform regular torque inspections. Place your inspection request to **BIG** using our distributors.

If anomalies are discovered during the use of the product, stop immediately the operation and contact **BIG** after turning off the product.

# NAME OF THE PART

## 1. Names



### ① MEGA Wrench Adapter

MEGA chuck series exclusive adapter. The adapter is provided with one-way clutch. Since the adapter is interchangeable, select the adapter that corresponds to the size of the collet chuck used.

### ② Recharging jack

It is the jack used to connect the included recharging device (AC adapter) and recharge the wrench.

### ③ LCD -Display

It displays the bar graph, the value of the tightening torque and the setting details.

### ④ Handling panel

Each operation is executed using the panel's buttons.

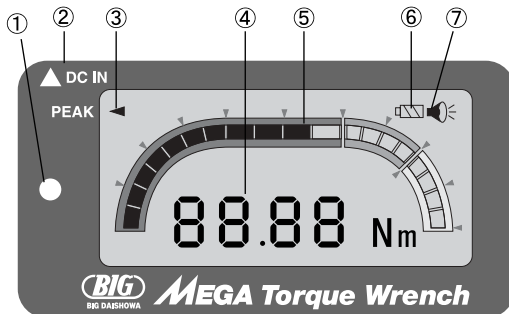
### ⑤ Grip

The grip vibrates and a sound is emitted when the set torque is reached.

### ⑥ Effective length line (Force point)

It indicates the point where apply the force when tightening.

## 2. Details of the LCD Display



### ① Recharge indicator

The red LED turns on when recharging the product.

### ② DC IN

It indicates the location of the recharging jack.

### ③ PEAK hold indicator

The ◀ symbol is displayed when the PEAK hold function is worked.

### ④ Numerical display

It indicates the value of the tightening torque or the setting values.

### ⑤ Bar graph

It indicates, in real time, the ratio in relation to the set torque on the bar graph. And since the scale is divided in different colours it is also possible to obtain a midway value.

• Red scale	→	20 — 80%
• Orange scale	→	80 — 100%
• Green scale	→	100 — 120%

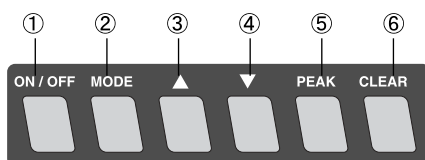
### ⑥ Low battery indicator

It is displayed when the battery's energy is low and it is necessary to recharge it. At the same time the buzzer will emit a sound for 30 seconds and after, the device will automatically power off.

### ⑦ Buzzer

It indicates that the buzzer is active. (It is always displayed.)

## 3. Details of the operation panel



### ① ON/OFF button

It is used to turn ON or OFF the power.

### ② MODE button

It is used to switch between the "Working mode" and the "Setting mode".

### ③ button

If pushed in the "Setting mode", it displays the previous setting.

### ④ button

If pushed in the "Setting mode", it displays the successive setting.

※ The and buttons can only be used in the "Setting mode".

### ⑤ PEAK button

It is used for the PEAK hold function.

### ⑥ CLEAR button

Using this button while the PEAK hold function is worked will reset the measurement value.

# OUTLINE OF THE OPERATION MODES

The Digital MEGA Torque Wrench is provided with two modes: the "Working mode" to perform the actual tightening operation and the "Setting mode" to select the recommended torque suitable for the collet chuck. The outline of each operation is explained in this section.

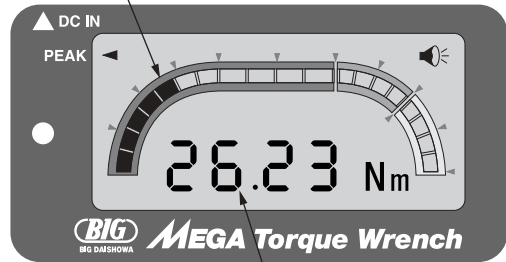
## 1. Working mode

This mode is used for executing the tightening operation. It is active when the power is turned ON.

In the LCD, the current tightening torque is displayed in real time and the bar graph is linked to it.

If the PEAK hold function is active, it is possible to keep the highest value of the tightening torque.

The bar graph is linked to the torque.

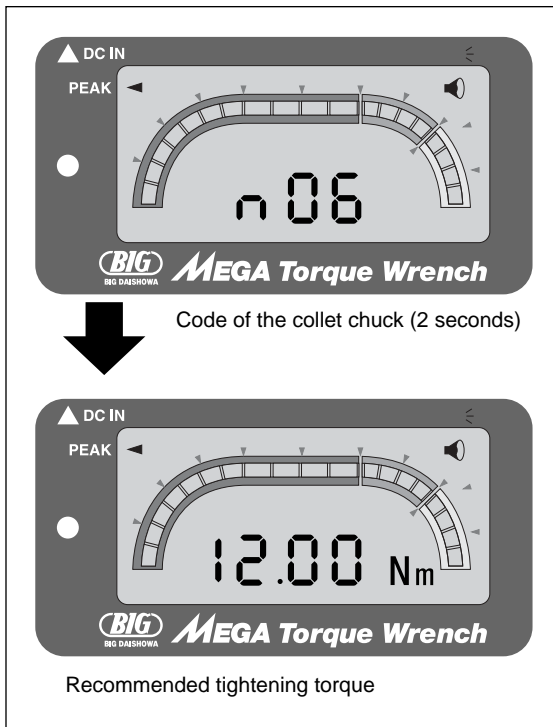


The value of current tightening torque is displayed in real time.

## 2. Setting mode

In the Digital MEGA Torque Wrench, the recommended tightening torque for each collet chuck is preset in advance. In the "Setting mode" it is possible to display the preset values and to select the suitable setting.

When the "Setting mode" is selected, a code indicating the name of the suitable collet chuck is displayed for 2 seconds and then its recommended tightening value is also displayed.



Example of the setting mode

## 3. Concerning the preset

The recommended tightening torque for each size of Mega New Baby Chuck and Mega E Chuck is preset in the Digital MEGA Torque Wrench.

The details of the preset settings are indicated in the table below.

No.	Suitable collet chuck	Display code	Recommended torque (N·m)
1	MEGA 6N	n 06	12
2	MEGA 8N	n 08	19
3	MEGA10N	n 10	35
4	MEGA13N	n 13	40
5	MEGA16N	n 16	45
6	MEGA20N	n 20	50
7	MEGA 6E	E 06	20
8	MEGA 8E	E 08	35
9	MEGA10E	E 10	40
10	MEGA13E	E 13	50

Each setting can be displayed on the LCD by pushing the buttons on the operation panel.

If the button is pushed, the settings will be displayed on the LCD following the order below.

n06	n08	n10	n13	n16
E13	E10	E08	E06	n20

(Pushing the button will display the settings in the opposite order.)

# OPERATION PROCEDURES

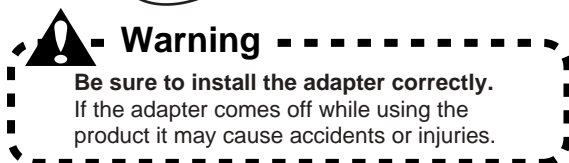
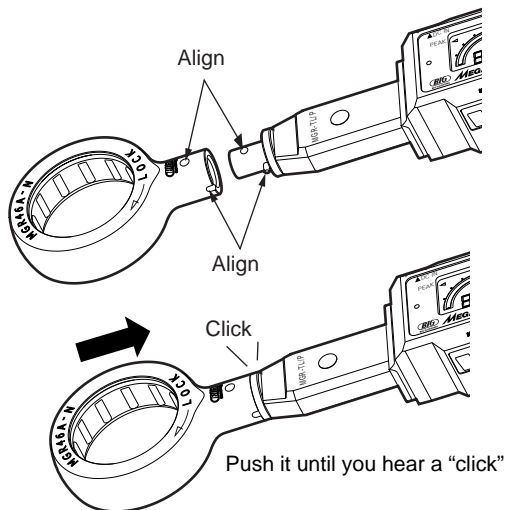
## 1. Installation of the adapter

Align the ball and the pin of the torque wrench's tip to the respective holes of the MEGA Wrench Adapter and insert it until you hear a "click".

Select the MEGA Wrench Adapter compatible with the collet chuck used from the below table.

MEGA Wrench Adapter	Collet chuck
MEGA20A-N	MEGA 6N
MEGA25A-N	MEGA 8N MEGA 6E
MEGA30A-N	MEGA10N MEGA 8E
MEGA35A-N	MEGA13N MEGA10E
MEGA42A-N	MEGA16N MEGA13E
MEGA46A-N	MEGA20N

The MEGA Wrench Adapter is not included.  
Please place a separate order for it.



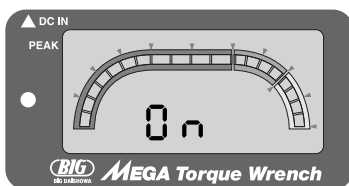
## 2. Turning ON/OFF the power

### 1) Power ON

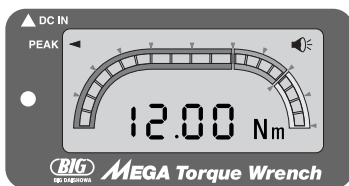
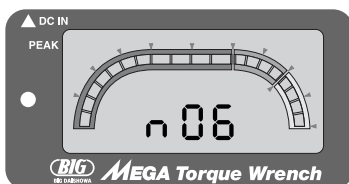
- ① Push the ON/OFF button of the operation panel for more than 1 second.



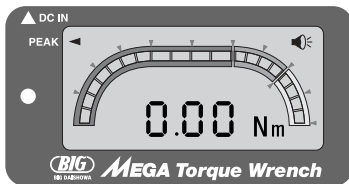
- ② Release the button as soon as "On" is displayed on the LCD.



- ③ The currently code set and the value of the recommended torque are displayed respectively for 2 seconds.



- ④ Then the LCD switches to the "Working mode". It is now possible to execute the tightening operation.

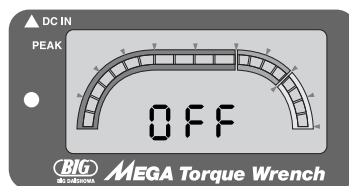


### 2) Power OFF

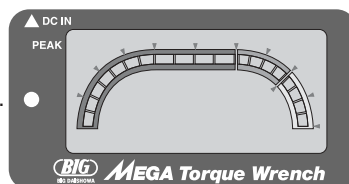
- ① Push the ON/OFF button of the operation panel for more than 1 second.



- ② Release the button as soon as "OFF" is displayed on the LCD.



- ③ All the indicators on the LCD disappear and the power is turned off.



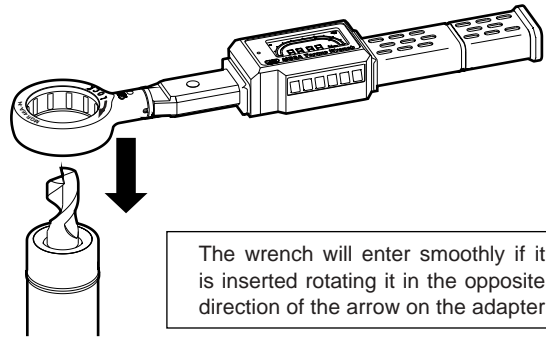
The device automatically turns OFF if the operation panel is not used or the tightening operation is not performed within 5 minutes. (Power save function)

The setting selected when the device is turned OFF is saved, so it is possible to use it immediately after turning ON again the device.

# OPERATION PROCEDURES

## 3. Tightening operation

For safety reasons, when tightening the nut, secure the holder to a tool clamping device (BIG Tooling Mate, etc.) and proceed with the operation.



The wrench will enter smoothly if it is inserted rotating it in the opposite direction of the arrow on the adapter.

### 1) Positioning the wrench

Insert the wrench into the nut with the LCD facing up.

Align the adapter to the center of the nut and insert the wrench vertically being careful not to hit the cutting edge with the adapter.

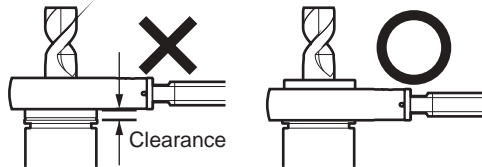


### Caution

#### 1. Insert the adapter firmly to the base of the nut and make it adhere completely to the nut.

If the tightening operation is executed when the adapter adheres only partially to the nut, it will not be possible to reach the appropriate torque and also this may worsen the accuracy or damage the adapter.

The tightening nut of the Mega Chuck is provided with a gap that indicates the installation position of the MEGA Wrench. Install the adapter in a way to have no clearance between the gap and the adapter itself.

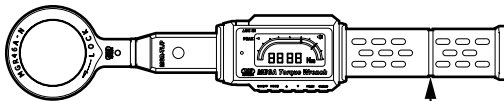


#### 2. Before tightening, always clean the external surface of the nut with a cloth and take measures to prevent the nut and the adapter from slipping.

### 2) Tightening

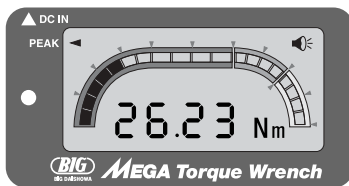
① Grasp the gripper and tighten the nut.

Hold the gripper in order to apply the tightening force on the effective line and tighten slowly.

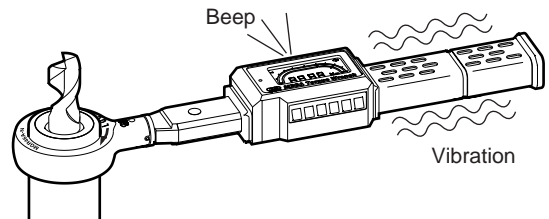
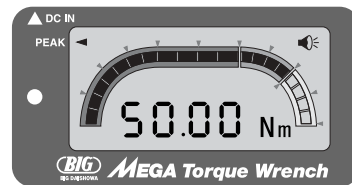


Effective line

② As soon as the tightening torque is applied, the value of the torque and the bar graph are displayed on the LCD. They both change in real time.



③ When the tightening torque set is reached, the grip vibrates and the buzzer emits a sound notifying that the tightening operation is finished.



### Caution

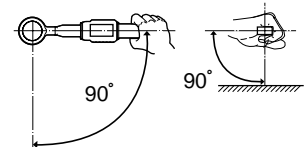
1. The Digital MEGA Torque Wrench is exclusively a tightening wrench. To remove the nut, use the normal MEGA Wrench.

2. Always use the product within the setting range.

If a torque that exceeds the wrench's capacity is used, the safety function will activate and it will not be possible to operate. In this situation, turn off the power and resume the operation after restarting.

3. When holding the grip, hold it lightly using as center the valid line and apply the force smoothly and gradually.

4. When tightening, apply a perpendicular force to the wrench (up and down or right and left).





## 4. Setting of the tightening torque

In case of tightening a collet chuck with a different size, replace the adapter or modify the wrench's settings.

### ⚠ Caution

**Before tightening, always check the setting and be sure to execute the tightening operation with the correct setting.**

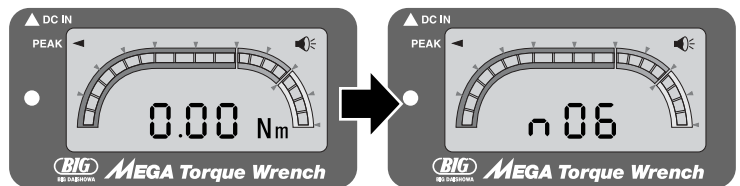
If the operation is performed with the wrong setting, the proper tightening torque will not be reached becoming cause of damages for the collet chuck or the torque wrench.

### 1) Changing the operation mode

① Push the MODE button on the operation panel to switch to the "Setting mode".



② The LCD will change from the "Working mode" display to the "Setting mode" display. In the "Setting mode" display, the code of the collet chuck is displayed for 2 seconds and then its recommended tightening value is also displayed.



Working mode's screen

Setting mode's screen

### 2) Changing the settings

① Push the ▲▼ buttons on the operation panel to modify the settings.

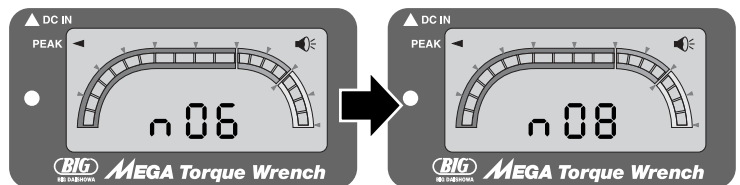


If the ▼ button is pushed, the settings will be displayed on the LCD following the order below.

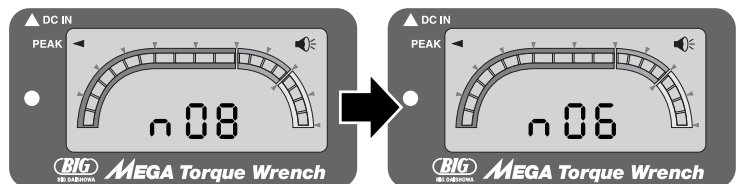
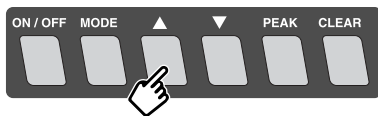
(Pushing the ▲ button will display the settings in the opposite order.)

n06	n08	n10	n13	n16
E13	E10	E08	E06	n20

② Push 1 time the ▼ button to display the successive setting.



③ Push 1 time the ▲ button to display the previous setting.



### 3) Confirming the setting

While the intended setting is displayed on the screen, push again the MODE button to confirm it. The displayed contents become the current setting.



The LCD switches to the "Working mode". It is now possible to use the new setting for the tightening operation.

● If the MODE button is not pushed within 5 seconds, the LCD switches automatically to the "Working mode".

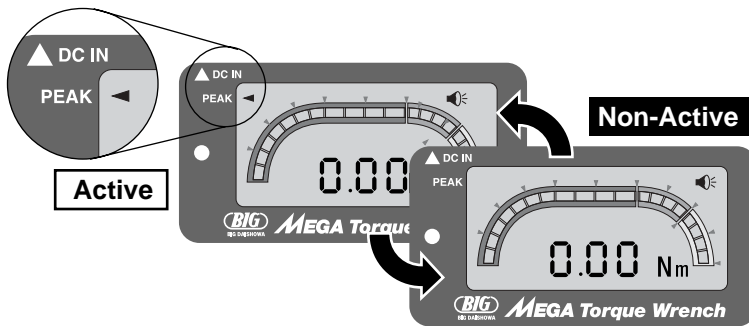
In this case, the operation executed on the "Setting mode" is cancelled and the device switches back to the previous setting.

# OPERATION PROCEDURES

## 5. PEAK hold setting

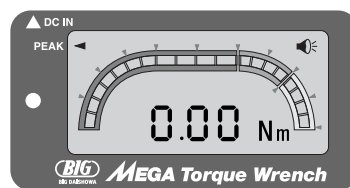
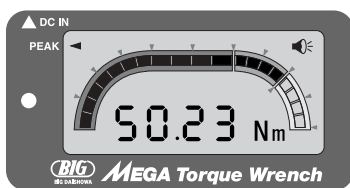
### 1) Changing the settings

It is possible the PEAK hold function used by pushing the PEAK button on the operation panel.



### 2) Clearing the measured result

- ① When the PEAK hold function is worked, the previously measured result is displayed on the LCD.
- ② Before executing a new work, push the CLEAR button to clear the measured result.
- ③ The digits on the LCD are reset (0.00).



● The measured result will be saved only if it exceeds the recommended torque.

Under this condition proceed with the next work.



## Caution

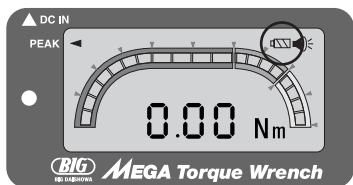
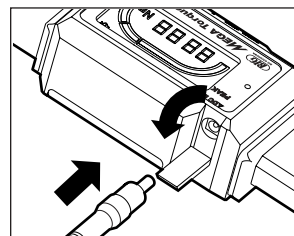
Be sure to clear every time the measured result before using the device.

If it is not cleared, the LCD displays only the maximum measured value. Be aware that under this situation, even if the intended torque is reached, the buzzer does not sound and the grip does not vibrate.

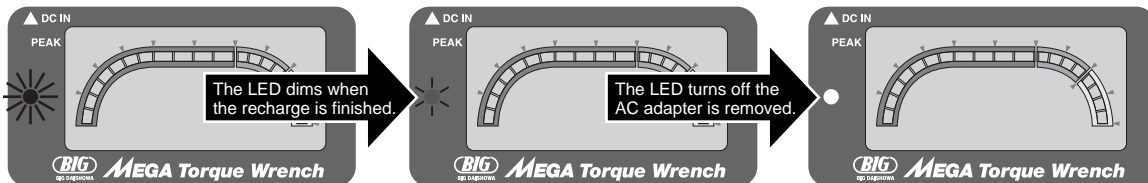
## 6. Recharging procedures

When the battery's energy is low, the low-battery indicator is displayed. Use the included AC adapter and recharge the device.

- ① Power off the device, open the recharging jack's access and connect the AC adapter's plug to the power socket inside it. Check that the outlet of the AC adapter is connected correctly to the power outlet.



- ② When recharging, the LED of the recharge indicator on the LCD turns on (red). The recharge's duration is approximately 3 hours. The LED dims when the recharge is finished normally. Remove the AC adapter promptly when the recharge is terminated. The LED turns off when the AC adapter is removed.



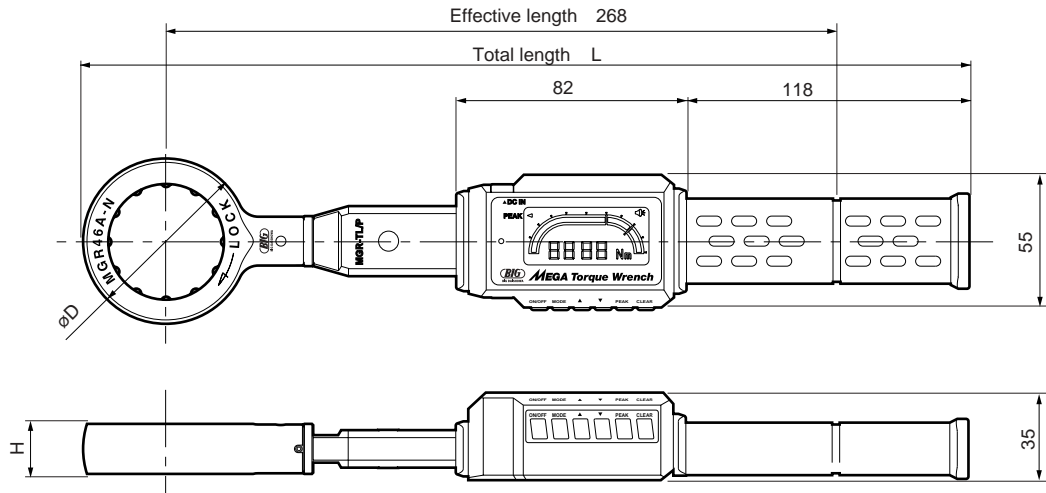
- The Torque Wrench has a built-in lithium battery.
  - Depending on the operation conditions, it may be recharged for about 500 times.
  - With 1 recharge it is possible to perform about 4,000 tightening operations.
  - The substitution of the built-in battery can not be performed by the customer. Please contact BIG using our distributors.



## Caution

- Use only the recharging device indicated in this manual. Do not use the recharging device outside the indicated power specifications.

# SPECIFICATIONS



## ● Torque Wrench body

	MGR-TL/P
Torque setting range	10–50N·m
Minimum read (digit)	0.01N·m
Display	7 LCD segments → 4 digits, numerical display 20 LCD segments → bar graph
Basic functions	PEAK hold Tightening completion alarm → sound emission and vibrations Auto Power OFF (5 minutes)
Power supply	Built-in lithium battery (Rechargeable about 500 times)
Operation's quantity	About 4,000 tightening operations possible with 1 recharge
Recharging time	About 3 hours (Using the exclusive adapter)
Operating temperature	0 ~ 40°C (Without dew condensing)
Weight	290g (Only the Torque Wrench body, Mega Wrench Adapter and AC Adapter excluded)

## ● AC Adapter

Power supply	AC100–240V, 50/60Hz
Output specifications	DC5V, 1A
Operating temperature	0°C–40°C
External dimensions	34 × 22 × 44mm
Weight	75g
Cable length	1.5m

## ● Mega Wrench Adapter

Model	Dimensions (mm)			Weight (kg)
	L	∅D	H	
MGR20A-N	355	36	16	0.13
MGR25A-N	359	44	20	0.18
MGR30A-N	362	50	20	0.22
MGR35A-N	364.5	55	20	0.23
MGR42A-N	368	62	20	0.25
MGR46A-N	370	66	20	0.27



***BIG DAISHOWA SEIKI CO., LTD.***

■ EXPORT DEPARTMENT

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