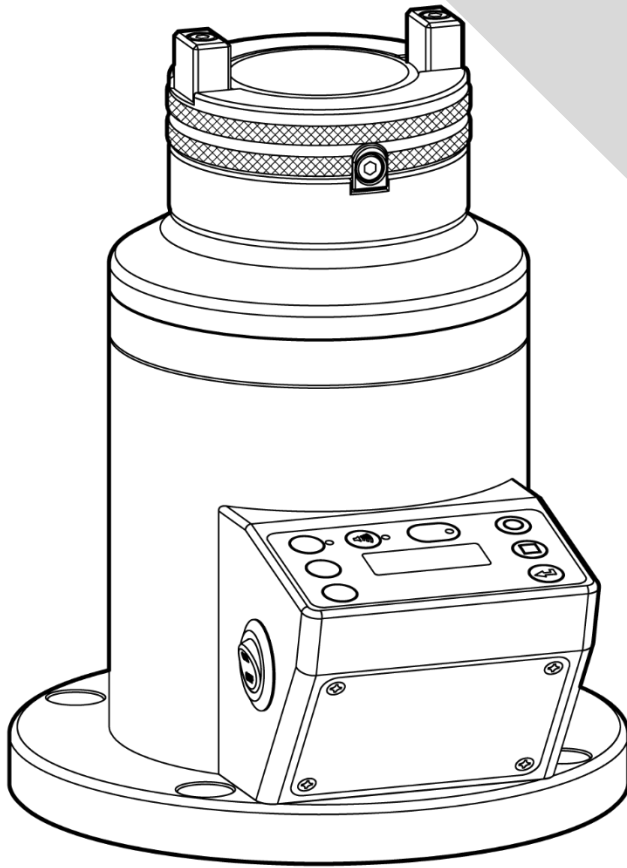




TORQUE FIT

User's Manual



Tightening Fixture for Collet Chucks
with Torque Indicator

Be sure to read this document before use.

BIG DAISHOWA SEIKI CO., LTD.

BIG TORQUE FIT User's Manual

Thank you very much for choosing BIG TORQUE FIT.

Be sure to read the content of this manual carefully before use, and to keep it in a place where all users can consult it easily at any time.

TORQUE FIT is a tightening fixture dedicated for collet chucks with torque indicator.

- ★ Do not apply torque of 85N·m or greater. The correct value will not be displayed.
- ★ Be sure to turn on the power before use. Use with power off may lead to malfunctions or damage.

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Safety indications

This user's manual displays the following indications for the safe use of the product.

Use the product in accordance with the directions and precautions outlined in this user's manual.



This mark is displayed when incorrect use of the product poses a risk of injury to the USER or damage to property.

Safety Precautions

The following precautions are provided in order to ensure safe and correct use of this product as well as to prevent injury or physical damage to users and others. Precautions are classified by levels into "Caution" and "Warning" in order to indicate the degree of harm or damage and urgency. Be sure to follow the instructions, as all these are important safety precautions.



CAUTION: Improper use of the product may result in damage to property.



WARNING: Improper use of the product may result in injury or damage to property.



WARNING

1. Handling this product

- (1) Do not dismantle or modify this product.
 - This may affect its safety, functionality, or service life, and/or may lead to malfunctions.
- (2) Do not expose this product to fire.
 - There is a risk of damage or the release of toxic substances.
- (3) Do not use anything other than the specified accessory or optional products which appear in this user's manual.
 - This may lead to accidents or injury.
- (4) Do not use in locations where the ambient temperature is $\leq 0^{\circ}\text{C}$ or $\geq 40^{\circ}\text{C}$.

2. Work

- (1) Do not use in moist or wet locations, or where it may be splashed with water or oil.
 - There is a risk of electric shock, smoke, or malfunction.
- (2) Make sure the work area has sufficient lighting.
 - Working in dark locations may lead to malfunctions.
- (3) Always keep the workshop floor clean.
 - Floors wet with oil etc. may lead to accidents due to slippery footing.
- (4) Do not use in locations with combustible liquids or flammable gases.
 - There is a risk of explosion or fire.
- (5) Mount the adapter securely.
 - Otherwise, this may lead to accidents, injury, or errors in precision.
- (6) Keep the holder and bore area clean for use.
 - The presence of cutting oil etc. may cause the taper part to bite in and lead to accidents.
- (7) If a cutting tool is attached, be sure to cover it with a rag when mounting or removing the holder.
 - The cutting tool is dangerous when facing upwards. This may lead to accidents or injury.
- (8) Do not leave the holder set on the body.
 - The cutting tool is dangerous when facing upwards. This may lead to accidents or injury.
- (9) Be sure to turn on the power before use.
 - Excessive force may lead to malfunctions or errors in precision.
- (10) While working, first wipe off any oils on tools and hands to make sure they are not slippery, and then handle the product.
 - A slip of the hand during work may lead to accidents or injury.
- (11) Do not clean with an air blower.
 - Dust in the internal clutch will prevent normal operation.

Safety Precautions



CAUTION

1. Handling this product

(1) Do not use in the following locations.

- Locations with high temperature and humidity
- Dusty locations
- Locations with severe vibration
- Unstable locations
- Locations where water or oil may enter the device
- Locations with strong magnetic fields

• This may lead to malfunctions or damage.

(2) Do not subject the body to excessive or unnecessary weight.

• This may lead to malfunctions or damage.

(3) Do not strike the holder when loosening it.

• This may lead to malfunctions or damage.

(4) Do not subject the body to impact.

• This may lead to malfunctions or damage.

(5) Do not handle the power adapter cord roughly.

1) Do not carry it by the cord, or pull out the plug by yanking on the cord.

2) Keep the cord away from heat, oil, and sharp corners.

3) Use in locations where the cord will not be subject to damage from feet, snags, or unreasonable force.

• Otherwise, this may lead to electric shock or fire caused by short-circuits.

2. Work

(1) Do not use for anything other than the applications which appear in this user's manual.

• This may lead to accidents or injury.

(2) Do not use for work beyond the product's capacity.

• This may lead to accidents or damage.

(3) Do not allow persons other than the operator to approach during work.

• This may lead to accidents or injury.

(4) Do not work in unnaturally strained positions or stances.

• This may lead to accidents or injury.

(5) Be sure to carry out an inspection before use.

1) Before use, adequately inspect the device to confirm that none of the parts are damaged, everything moves cleanly, and that the given functions can be demonstrated.

• Failure to do so may lead to accidents or injury.

(6) Apply force gradually without imparting any sudden impulses.

• Correct torque values will not be output.

Usage Precautions

For correct and safe use

- Carry out a start-of-work inspection before use and confirm settings.
- Do not apply torques beyond the product's capacity. Correct numerical values will not be output.
- Note that using the product in locations with strong magnetic fields can lead to malfunctions.
- Note that the product is at risk of malfunction or burning if wetted with water or oil.
- Note that dropping objects on the product may lead to damage or malfunctions.
- When tightening, keep the wrench horizontal while applying force.
- We recommend regular torque inspections. As BIG handles inspections, place requests through your dealer.

In the unlikely event that the above issues arise during work, immediately cease use, turn off the power and contact BIG.

Part Names

1. Part names

(1) TORQUE FIT body

(2) Tooling Mate adapter

Use an adapter compatible with the interface.

(3) Adapter Lock Screw

Fixes the Tooling Mate adapter.

(4) Body mounting hole

M8 bolt holes x 4p (□95)

(5) Power cord hole

A hole for the power line to pass through from below the mounting block.

(6) DC jack

A jack to connect the supplied AC adapter.

(7) ON/OFF switch

(8) Control panel

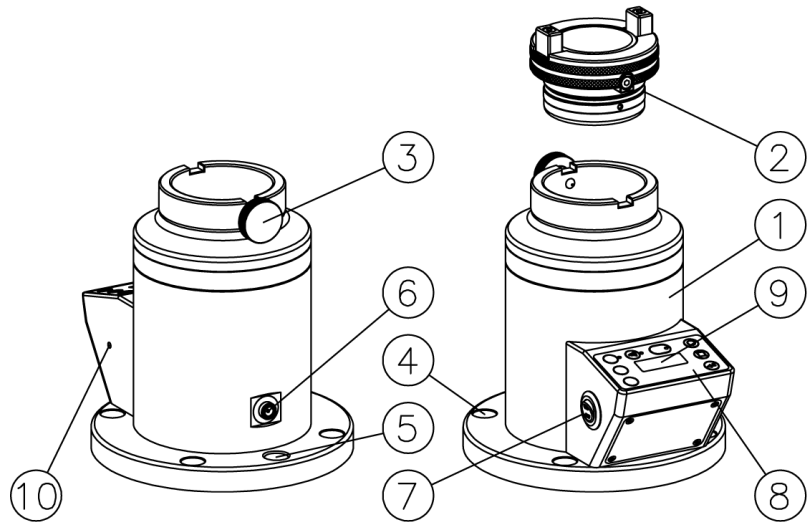
Operation is performed with the panel switches.

(9) LCD (liquid crystal) display

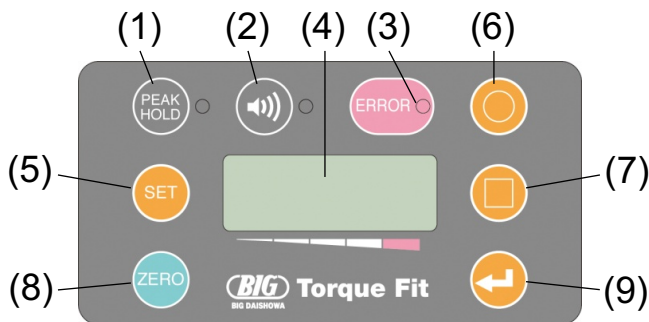
Displays the tightening torque and settings.

(10) Buzzer

When turned ON, the buzzer will sound according to the tightening status.



2. Control panel details



(1) PEAK HOLD (ON ↔ OFF)

Displays the maximum value.

(2) BUZZER

Buzzes to indicate the set torque region during tightening.

Torque value 80% to 100% 3 buzzes

Torque value 100% or more 1 buzz

(3) ERROR LED

Torque value 100% to 120% Flashing

Torque value 120% or more Lit

(4) LCD display

Display reverses black and white at torque value 120%

(5) SET

Used to select the torque value when the setting value screen is displayed.

(6) O

Selects the product name.

Moves the cursor position for USER settings.

(7) □

Selects the model.

Changes the numerical value of the cursor position for USER settings.

(8) ZERO

Shifts to the torque value display screen.

Sets the numerical value to zero during peak hold.

(9) Enter

Shifts to the setting value display screen.

Confirms the model selected using □.

Confirms the numerical value selected with USER.

Part Names

3. LCD (liquid crystal) display details

The LCD display has a torque value display screen and setting mode screens.

Setting mode screens include the setting value display screen, product name display screen, model display screen, and USER setting screen.

1) Setting mode screens

- Setting value display screen
Displays configured models and appropriate tightening torques.
- Product name display screen
Displays product names.
- Model display screen
Displays the model being configured, the appropriate tightening torque for the model, and the * indicating selection mode.
- USER setting screen
Displays the setting position cursor and the * indicating setting mode.

MEGA 10N
35 N.m

MEGA N

MEGA 10N
* 35 N.m

USER
* 00 N.m

2) Torque value display screen

Displays the appropriate tightening torque setting at top right, a bar graph of the percentage of target torque at the bottom, and the tightening torque value in the center.

0.00 35 N.m

Operation Overview

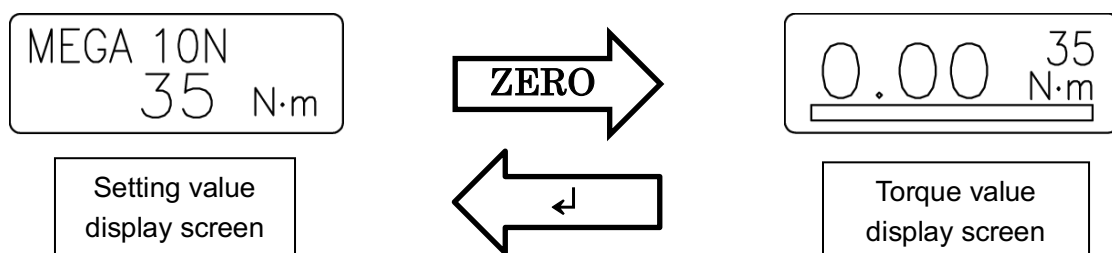
The TORQUE FIT has a "torque value display screen" for use during actual tightening, and "setting mode screens" for selecting the appropriate tightening torque compatible with the collet chuck.

1. Torque value display screen ↔ Setting value display screen

The setting value display screen is displayed when the power is ON. (Previously set torque value) Confirm the model and appropriate tightening torque value. When using a different collet chuck model, set the collet chuck or torque value to be used.

To perform tightening work, press the ZERO switch to switch to the torque value display screen.

In order to change to a different torque value during use, press the ↵ (Enter) button to switch to the setting value display screen. (Reference: Tightening torque setting (P7))



2. Preset content

The TORQUE FIT has appropriate tightening torques preset for various sizes of the MEGA MICRO CHUCK, MEGA NEW BABY CHUCK, MEGA E CHUCK, NEW BABY CHUCK, and MEGA ER GRIP.

The preset settings are shown in the table below.

The USER can set any arbitrary numerical value up to 80N·m.

Product name ●	Model/Torque value ■				
MEGA S	MEGA 3S	MEGA 4S	4S ≤ ø3	MEGA 6S	6S ≤ ø3
	4	10	6	12	6
	MEGA 8S				
	16				
MEGA N	MEGA 6N	6N ≤ ø3	MEGA 8N	8N ≤ ø3	MEGA 10N
	12	6	19	6	35
	MEGA13N	MEGA16N	MEGA20N	MEGA25N	
	40	45	50	70	
MEGA E	MEGA 6E	MEGA 8E	MEGA 10E	MEGA 13E	
	20	35	40	50	
NBS	NBS 6	NBS6 ≤ ø3	NBS 8	NBS8 ≤ ø3	NBS 10
	12	6	19	6	35
	NBS 13	NBS 16	NBS 20		
	40	45	50		
MEGA ER	MEGA ER16	ER16 ≤ 2.9	MEGA ER20	MEGA ER25	MEGA ER32
	40	15	50	60	80
USER	USER				
	XX				

Note) The tightening torque changes for some products with clamping diameter of ø3 or less, even with the same model number.

Example: MEGA4S 10N·m Clamping diameter ø3 or less (4S ≤ ø3) 6N·m

3. PEAK HOLD

Press the PEAK HOLD button on the control panel to enable/disable the peak hold function. When enabled, the LED to the side of the button turns ON.

4. (Buzzer)

Press the (buzzer) button on the control panel to enable/disable the buzzer function. When enabled, the LED to the side of the button turns ON.

5. ZERO

- 1) Press the ZERO button to switch from the setting value display screen to the torque value display screen.
- 2) Set the numerical value for PEAK HOLD to zero.
- 3) The ZERO button performs zero reset.

To see small torque values, press the ZERO button before tightening if there are major temperature changes or when first using the device.

Press the ZERO button without torque applied. Accurate numerical values will not be displayed if the ZERO button is pressed while force is being applied.

Operating Method

1. Mounting the body

Considerable force is applied to the body when tightening a tool. Be sure to fix securely with 4 cap bolts to a workbench, surface plate, solid and stable table or similar before use. There is a hole in the base of the body for the power cable to pass through. If the cord runs over the tabletop, there is a risk of short circuits due to cord snagging or pinching. We recommend drilling cable holes as well as bolt holes, and passing the cord through from the bottom.

2. Mounting the adapter

Insert an adapter compatible with the holder shank onto the top of the TORQUE FIT, and fix it securely with an Adapter Lock Screw.

3. Power adapter

Connect the supplied power adapter to 100 VAC before use.
For a long period of disuse, remove the power adapter.

4. Power switch

Turn ON the power switch at the left of the control panel.

5. Tightening torque setting

The LCD display has a **torque value display screen** and **setting mode screens**.

The **setting value display screen** is displayed when the power turns ON. (Setting value displays previously selected value)

- Torque value selection (example: selecting MEGA10N)

1) Turn the power ON or press \leftarrow to shift to the **setting value display screen**.

MEGA 6S
12 N·m

2) Press SET.

Displays the product name previously set.

MEGA S

3) Press \bigcirc to select the product name.

Press \bigcirc to change the product name through the order given below. Press repeatedly until MEGA N is displayed.

MEGA S \rightarrow MEGA N \rightarrow MEGA E \rightarrow NBS

\uparrow \rightarrow MEGA ER \rightarrow USER \rightarrow

MEGA N

Press \bigcirc once to display MEGA N

4) Press \square to select the model.

With MEGA N displayed on the LCD, press \square to change the model through the order displayed below. Press repeatedly until MEGA10N is displayed.

MEGA6N \rightarrow 6N \leq \emptyset 3 \rightarrow MEGA8N \rightarrow 8N \leq \emptyset 3

\uparrow \rightarrow MEGA10N \rightarrow MEGA13N \rightarrow MEGA16N
 \rightarrow MEGA20N \rightarrow MEGA25N \rightarrow

MEGA 10N
* 35 N·m

At this point, the LCD displays the model, recommended torque, and the * mark.

MEGA 10N
35 N·m

5) Press \leftarrow with MEGA10N displayed on the LCD.

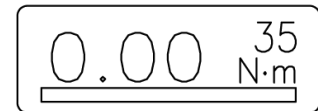
The * mark below the model will disappear when settings are complete.

Setting value
Display screen

Setting mode screens

6) Press ZERO to switch to the **torque value display screen**, and perform measurement.

The **torque value display screen** displays the torque value in the center, the appropriate tightening torque at top right, and a bar graph linked to the tightening torque at the bottom.



**Torque value
Display screen**

● **USER settings (00 - 80N · m)**

1) to 2) are the same as the torque value selection given above.

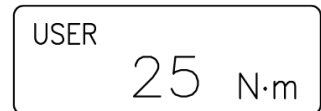
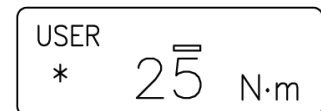
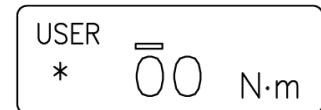
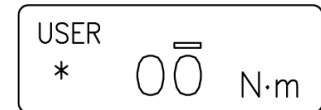
3) Having displayed USER with the \bigcirc switch, press the \square switch once to move to the torque input screen.

4) Move the digit display cursor using the \bigcirc switch.

5) In the above status, press \square to change the numerical value where the cursor is.

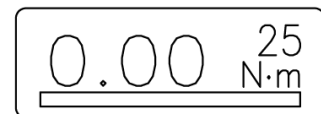
6) \leftarrow (Enter) confirms the numerical value.

7) Change to the **torque value display screen** with ZERO.



**Setting value
Display screen**

Setting mode screens



**Torque value
Display screen**

6. Tightening work

1) Mounting of the holder

Before mounting the holder to the TORQUE FIT, remove any cutting oil or swarf.

Also, check that there is nothing wrong with the chuck or collet.

2) Mounting of the cutting tool

When mounting or removing a cutting tool, be sure to cover the tool with a rag, etc., and be careful of the blade during work.

3) Tightening

When tightening torque is applied, a bar graph is displayed on the LCD screen giving the ratio of the torque value to the appropriate torque.

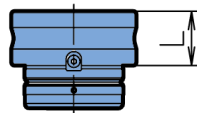
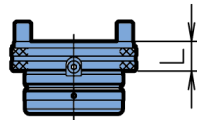
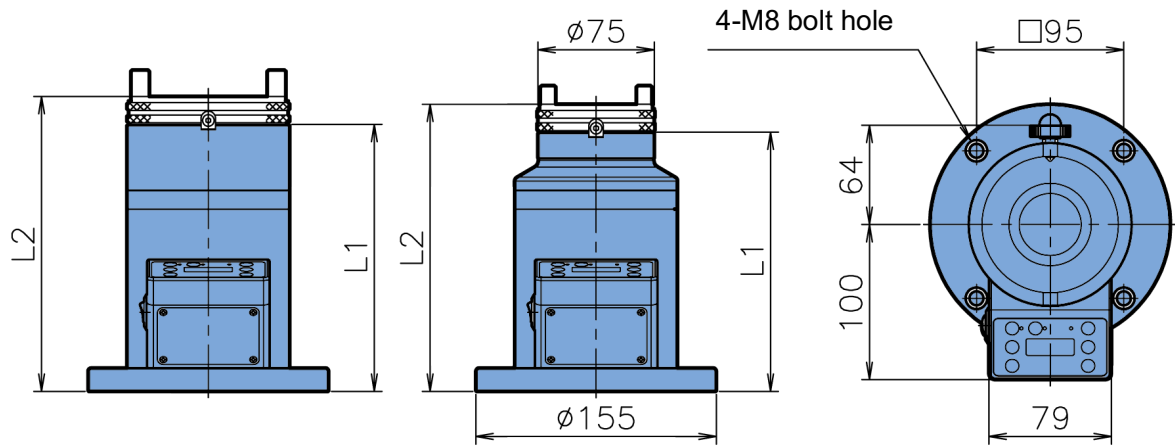
When the buzzer is ON, it will beep three times at 80% to 100% of the target torque and once at 100% or more to indicate the appropriate torque region.

Apply force in the orthogonal direction, with the spanner or wrench horizontal. If sharply tilted, the correct numerical value will not be output.

When tightening, apply force gradually without imparting any sudden impulses.

Correct numerical values will not be output if torque exceeding capacity is applied. Handle with care.

Specifications



TORQUE FIT Model	Adapter Model	Taper No.	L	L1	L2
TF-40	TMA40-30	30	18	167	185
	TMA40-40	40			
TF-50	TMA50-40	40			
	TMA50-50	50			

TORQUE FIT Model	Adapter Model	HSK No.	L	L1	L2
TF-40	TMA40-32R	32	33	167	200
	TMA40-40R	40			
	TMA40-50R	50	40		207
	TMA40-63R	63			
TF-50	TMA50-80R	80	43	172	215
	TMA50-100R	100	47		219

● TORQUE FIT (body)

Torque setting range		4N·m - 80N·m		
Minimum reading		$\bigcirc < 10$	0.01N·m $10 \leq \bigcirc$ 0.1N·m	
Display	Setting value display screen	Chuck model Chuck size		
	Torque value display screen	Torque value Set torque Bar graph		
	LED	PEAK HOLD Buzzer Error		
Basic function	PEAK HOLD			
	Buzzer	80% - 100% 2 buzzes	100% up 1 buzz	
	Error LED	100 - 120% Flashing	120% or more Lit	
	LCD	120% up Reverse display	100N·m or more Displays "---"	
Power supply		6VDC 1A		
Ambient operating temperature		0 - 40°C, no condensation		
Accessories		Adapter Lock Screw	User's Manual	AC adapter
Weight (kg)		8		

● AC adapter (accessory)

Power supply	100 - 240VAC, 50/60Hz
Rated output	6VDC, 1A
Ambient operating temperature	0 - 40°C
Exterior dimensions	L × W × H: 45.4 × 33.3 × 24.7mm
Weight	70g
Cable length	1.5m

EMC Information

Class and Group Description of EN 55011

This is a group 1, class A product according to EN 55011. This means that this product does not generate and/or use intentionally radio-frequency energy, in the form of electromagnetic radiation, inductive and/or capacitive coupling, for the treatment of material or inspection / analysis purpose and that it is suitable for use in domestic establishments and in establishments directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.

Note: Since this product is battery operated, this product is not connected to this low voltage power supply network.

Manufacturer Name : BIG DAISHOWA SEIKI CO., LTD.

Address : Nishiishikiricho 3-3-39, Higashiosakashi, Osaka, JAPAN

EU Name : BIG KAISER PRECISION TOOLING LTD.

Address : Glattalstrasse 516, 8153 Rümlang, Switzerland



BIG DAISHOWA SEIKI CO., LTD.

Takaramachi 5-2, Higashiosakashi Osaka 579-8025 JAPAN

Phone : (+81)-72-982-8277 Fax : (+81)-72-982-8370

<http://www.big-daishowa.com> E-mail: export@big-net.ne.jp