TOHNICHI DIGITAL TORQUE WRENCH FOR TIGHTENING

MODEL CPT-G

OPERATING INSTRUCTION

PRO TORK™

CPT20X10D-G

CPT100X15D-G

CPT280X22D-G

CE

To use this product correctly and safely, please read this manual carefully before use.
If you have any questions about the product, contact your nearest distributor or TOHNICHI MFG. CO., LTD.

Your Torque Partner
TOHNICHI

Cautions on Safety

To the user

In order to use the torque wrench properly and safely, please read this instructions before operation. If any question, please contact a Tohnichi official distributor or Tohnichi office. Keep this operating instruction for future use.

The safety alert symbol
This symbol means Attention! Your safety is involved.
Take prevention measures in this manual and performing "safety use and appropriate management".

Signal Words

Signal word is the title which shows the item which should be known on safe reservation of people and the handling of equipment. The signal word on safe has the classification of "danger", "warning" and "cautions" by the degree of riskof doing to people. It uses with a safe cautions symbol and the following situation is shown, respectively.

" Danger" : Imminent danger acting as a serious obstacle.
" Warnings" : A potential risk of becoming a serious obstacle.
" Cautions" : A potential risk of becoming an obstacle although it does not result seriously.

Warnings

① Please pay attention to the surrounding conditions or environment.

Do not use the main wrench, the charger and the battery in rain, or at wet condition.
It may cause an electric shock or fire.
Keep the work place well lit to avoid accidents.
Using it in a dark place may cause accidents.
Do not use in a place where inflammable liquid and gas exist.It may cause explosion or fire.

② Use the designated accessories only.

Do not use any items not directed in this instruction manual. It may cause explosion or injuries.

Cautions

① Keep the working place clean and tidy.

Working in a messy condition may cause accidents.

② Keep children away from the product or the work place.

As a basic rule, do not let any other person than the user himself should touch the product. It may cause injuries.

③ When not in use, keep them in a safe place.

Storage place should be in dry condition where it is securely locked and away from children. Otherwise, it may cause injuries.
Do not keep the main wrench or the battery in a environment where the temperature may exceed 50 degree Celcius.
It may lead to deterioration of the battery and cause fire.

④ Do not force this product to use beyond its capacity.

In order to use it safely and efficiently, use this product within the designated torque range. Using the product beyond its capacity may cause accidents.

⑤ Use this product to fit work.

Do not use this product for any other purpose than the instructed usage..It may cause injuries.

⑥ Always brace yourself and maintain balance when working.

Be careful not to slip and fall, which may cause injuries.

⑦ Do maintenance work carefully.

Keep the handle part of the wrench clean and dry. Keep it from oil or grease. Otherwise, it may cause the handle to slip and lead to injuries.

⑧ Conduct periodic checking to detect damaged part.

If you find any damaged part such as the plug or cord, request repair or replacement to the authorized distributor or Tohnichi. If you keep using the damaged ones, it may cause short-circuit or fire.

Precautions for Use

(1) Use the instructed batteries only.
(2) Do not apply vibration or physical impact on the product.
(3) Use this product only in conditions instructed on this manual.
(4) Check the functions and settings before use.
(5) Do not put the product in water or oil as it may cause product failure.
(6) Do not drop or hit the product against wall as it may cause breakage.
(7) Use the product within its capacity instructed in the manual.
(8) Make sure to conduct periodic check on the product.
(9) Check the display shows 0 before measuring.
(10) For accurate tightening or measuring, make sure to grip on the effective length line firmly and apply force at a right angle.

If the product should catch fire or emit unusual smell, stop using the product immediately, and put it in a safe place. Contact TOHNICHI MFG. CO., LTD. for further instructions.

Contents

1. Outline

This product is a digital torque wrench for tightening purpose. Upon reaching the set torque, a buzzer goes off and LED turns on to signal tightening completion. Applied torque will be indicated on the digital display as well as on LED indicator.

2. Features

- The indicator display enables the user to see the setting torque and the actual torque being applied at the same time.
- Applied torque will be directly reflected on the display in a timely fashion.
- Can register maximum 10 different torque settings (Target torque/Upper limit value/Lower limit value).
- Multiple units of measure selection through keypad setup: N·m, kgf·cm, kgf·m, lbf·in, lbf·ft.
- Maximum 50 of tightening data can be stored in the internal memory, and transferred to PC with RS232C cable (Optional).
- AA batteries are used (available in the local market).
- Can be used for re-tightening inspection method as well as loosening torque inspection method.

3. Components

1) Main body ・・・・・・・・・・・1pc
2) Operating Instruction ・・・・・・・1pc

Only for "-SET" model version

3) AA batteries ・・・・・・・・・・・2pc
4) Interchangeable head "TQH" ・・・1pc
5) Storage case ・・・・・・・・・・・1pc

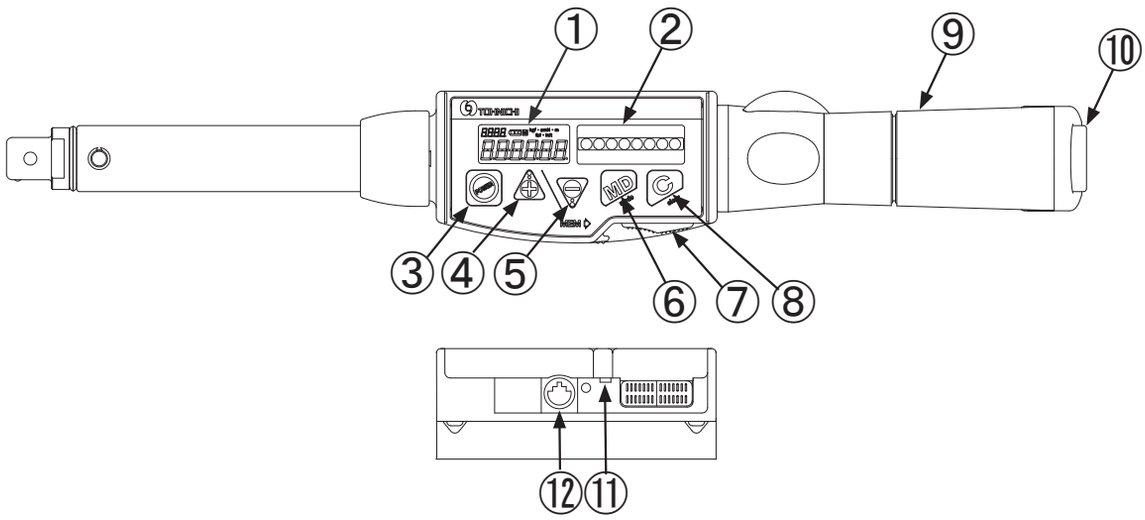
Optional Accessories

- PC connecting cable (No.585)
- Data processing software (EXCEL RECEIVER)

Cautions)

The interchangeable head (TQH) included in "-SET" model version does not guarantee its durability for specific continuous number of use, etc. Use it only with a CPT torque wrench, otherwise the product may not maintain the original durability. In case of breakage,
Tohnichi will be able to replace it with a new one (at your cost). Repairing may not be acceptable.

4. Name and Explanation of Each Part



① LCD display

Torque value, memory counter, tightening mode, torque unit, residual battery level will be indicated.

② Indicator display

Applied torque will be indicated by red and blue LED lamp positioning.

③ POWER key

Turn on/off power.

④ ▲ key

Send the counter forward and displays the measured data if any.

⑤ ▼ key

Send the counter backward and displays the measured data if any.

⑥ MD key

Push this key in PEAK mode, then it proceeds to "selecting the setting torque"

When you keep it pushed, it proceeds to "all data deletion" When you keep it pushed in RUN mode, it proceeds to "settings"

⑦ MEM key

Push this key to save the measured data send forward the counter.

⑧ C key

Measured data will be cleared.

⑨ Handle

AA batteries x 2pc are to be set inside the handle.

⑩ Cap

Cap for battery replacement (counter-clockwise)

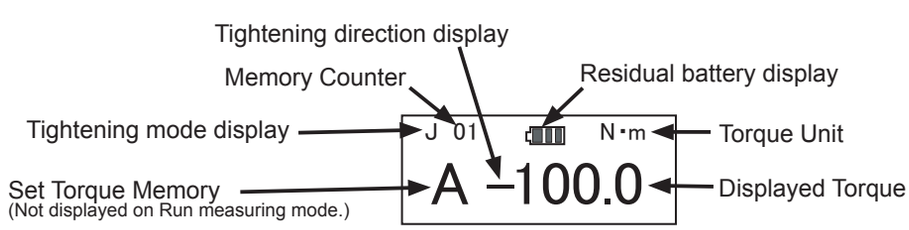
⑪ Reset switch

In case of display error or operational error, push this to reset. Noneed to use this switch after every recharging.

⑫ External output terminal

Connect the communication cable (No.585) to this terminal.

《LCD Display Details》



※ There will be no alphabetical symbol on LCD in Preset tightening mode. Only in Tightening judgement mode, "J" appears on the upper left side of the LCD.
Tightening direction display will be indicated only in case of counter clockwise direction as "-", otherwise the direction is clockwise.

5. Explanation of Functions

① Auto Zero function

In RUN mode, push Clear key to activate Auto Zero function. Displayed torque value will be cleared to zero (Auto Zero function will activate only when the displayed torque is within 7.5% of the maximum torque value). If the value is 7.5% of the maximum torque or more, it may show "Err9". Please refer to P25 "Error Message" for details.

② Auto Memory/Reset

Tightened torque value will be stored in the internal memory automatically after the set timing (selectable between 0.1 – 5 seconds) and the counter will be forwarded to the next. When the communication cable (No.585) is connected to CPT, torque data will automatically be output through the cable as auto memory saves the torque value. If you do not need to activate Auto Memory/Reset, set it at 0.0 second.

Auto memory/reset will be activated only when the torque reaches beyond the lower limit value. Also, if the target torque or upper/lower torque limit is set as Zero values, this function will not be active.

③ Mute

Set "OFF" on Buzzer setting. Buzzer will not go off.

④ Auto Power off

Power will be automatically turned off after 3 minutes without any key operation or any torque load (7.5% or lower of the maximum torque capacity).

In case of "LoBATT" alarm (low battery) condition, it turns off after 1 minute without use.

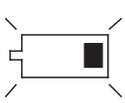
⑤ Residual battery display

It indicates the residual battery amount by LCD indicator.

Enough battery power remains.

About half the battery power is gone.

Prepare to replace the new batteries.



"LoBATT" alarm

No battery left. Please immediately replace the new batteries.

When "LoBATT" appears, all the keys operation will be ineffective except the power switch. After 1 minute, it turns off. The setting and the saved data will remain after batteries are gone.

⑥ Over torque alarm

When the applied torque exceeds 105% of the maximum torque capacity, the display blinks between " ———— " and the torque value and the buzzer goes off. In this case, the measured data will not be saved by the manual operation.

⑦ Over torque alarm/Peak Hold starting torque (Unit: N·m)

Model	Torque Range		1digit	105% of Max. Torque	7.5% of Max. Torque	Indication Start Torque	Below 7.5% of Max. Torque
	Min.	Max.		Over Torque Alarm	Peak Hold Start Torque	20 digit	Auto Zero Range
CPT20X10D-G	4	20	0.02	21.00	1.50	0.40	1.50
CPT50X12D-G	10	50	0.05	52.50	3.75	1.00	3.75
CPT100X15D-G	20	100	0.1	105.0	7.5	2.0	7.5
CPT200X19D-G	40	200	0.2	210.0	15.0	4.0	15.0
CPT280X22D-G	56	280	0.2	294.0	21.0	4.0	21.0

※ All the units except N.m, calculate the torque value based on the unit conversion table on P18.

6. Explanation of Each Mode

① Continuous display (RUN mode)

Set the memory counter to "00". The applied torque will be directly displayed without peak holding, and torque value will be returned to zero as you release loading.

Indicator display will not be used.

② Maximum value display (PEAK mode)

Set the memory counter between "01 – 50". Displayed value will increase as torque is applied, and captures the maximum value (PEAK torque) and remain displayed even after releasing loading. The indicator display will also be held at PEAK value.

(Please refer to P16 for operating instructions)

③ Tightening mode

PEAK mode has two different tightening settings.

Both tightening modes can register up to 10 different torque values A through J (target/upper/lower torque value).

・Preset tightening mode “PRESET”（default）

Use it as adjustable style of torque wrenches. First, set the target torque and target range (%). As you apply torque, the red LED starts to blink and move toward right. When it reaches the target range, the blue LED starts to blink and the buzzer goes off. When it reaches out of the target range, the red LED starts to blink and a buzzer goes off-and-on for alarm to prevent over-torque.

(Please refer to P10 for operating instructions and P19 for setting procedures.)

・Judgement Tightening mode "JUDGE"

A judgement will be given after tightening.

Set the lower limit torque, and the upper limit torque, and the judgement will be given after tightening. As torque is applied, the red LED indicator starts to blink and moves toward right. Upon reaching the lower limit torque, the blue LED blinks and the buzzer goes off to signal completion. When it exceeds the upper limit, the red LED starts to blink again and another buzzer goes off for alarm.

(Please refer to P12 for operating instructions and P21 for setting procedures.)

7. How to Use

① Preset tightening mode "PRESET"（default）

Set the target torque and range,and tighten up to that torque.

Set the tightening mode to "PRESET" (default).

This mode is for simple tightening operation that does not require a judgement or recognition of tightening direction.

Blue LED shows the target torque range.

(Please refer to P19 for setting procedures.)

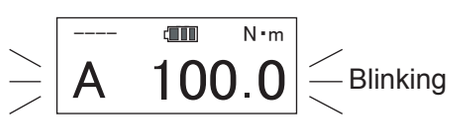
Example)

When you set target torque 100N･m and target range 5%, then the blue LED blinks in the range of 100-105N･m.

○ Selecting the target torque

PEAK mode (set the memory counter to 01-50).

Press MD key to proceed to torque setting.



Use ▲▼ key to select pre-registered torque value and press MEM key to confirm.

When there is measured data remained in the memory, you cannot change torque setting.

Please clear the measured data before change.

Press MD key or C key to proceed to measuring mode without changing the torque setting.

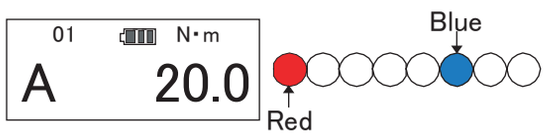
○ Tightening operation

Example） Target torque: 100N･m
Target range ： 5%

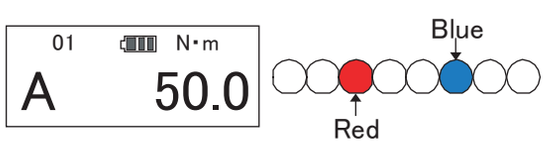
Blue LED turns on to indicate the target torque.

Start tightening

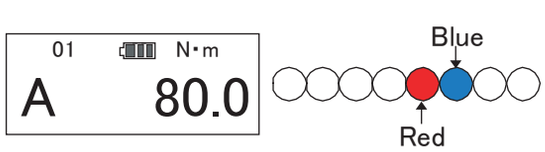
When it reaches 20% of the target torque, red LED turns on. (Red LED may turn on at 7.5% of the max capacity torque in case 20% of the target torque is higher than this value.)



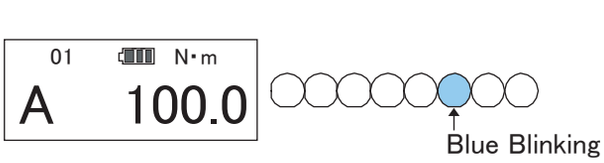
As torque increases, the red LED moves toward right.



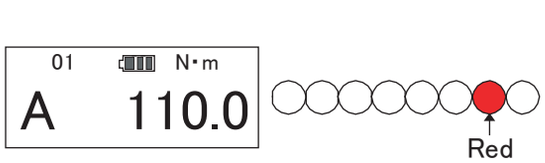
When it reaches 80% of the target torque value, buzzer starts to sound off-and-on (slow pace) to indicate the target torque is near.



When it reaches the target torque range, the blue LED starts to blink and the buzzer goes off continuously to inform tightening completion.

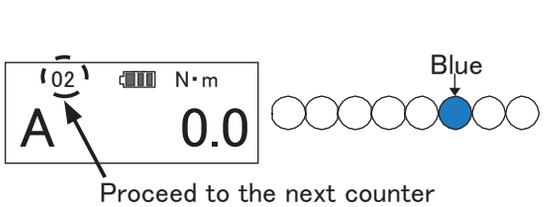


If it exceeds the target range, the red LED turns on again, and the buzzer pattern turns to off-and-on (fast pace).



Press MEM key to save and proceed to the next counter. If you need to clear the data, press C key.

※ It does not give a judgement.



Example） Target torque: 0 N･m

Blue LED at the target torque part will NOT turn on.
When it reaches 7.5% of the maximum torque capacity, the blue LED turns on and starts to move toward right.

② Judgement tightening mode "JUDGE"

This mode is for tightening with a judgement function.

Set the tightening mode to "JUDGE".

Set the target torque range (lower limit value and the upper limit value) and tightening direction. A judgement will be given as you press MEM key after tightening (In Auto memory/reset mode, the judgement will be given automatically).

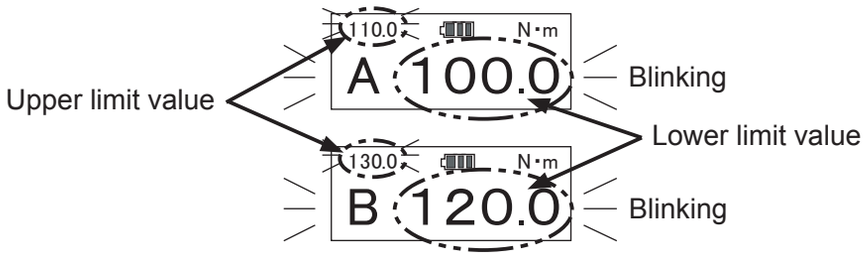
If you apply torque in the opposite direction against the settings, Peak Hold function will be ineffective.

(Please refer to P21 for setting procedures.)

○ Selecting the target torque

PEAK mode (set the memory counter to 01 – 50).

Push MD key to proceed to torque setting.



Use ▲▼ key to select pre-registered torque value and press MEM key to confirm.

When there is measured data remained in the memory, you cannot change torque setting. Please clear the measured data before change.

Press MD key or C key to proceed to measuring mode without changing the torque setting.

○ Tightening operation

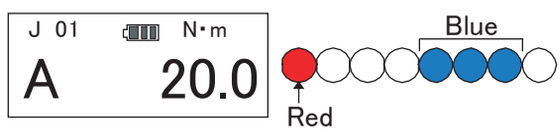
Example） Lower limit value: 80N･m

Upper limit value: 100N･m

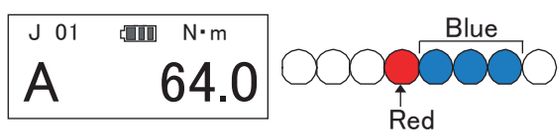
Tightening dorection: CW

Start tightening

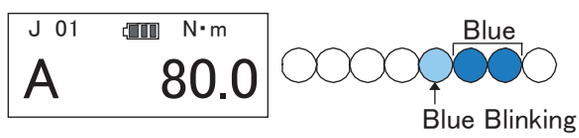
When it reaches 20% of the lower limit value, red LED turns on.(Red LED may turn on at 7.5% of the max capacity torque in case 20% of the target torque is higher than this value.)



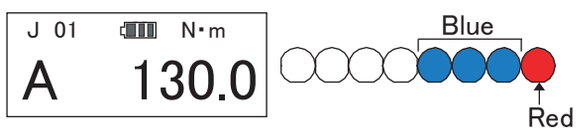
As torque increases, the red LED moves to right. Upon reaching the 80% the buzzer starts to sound off-and-on (slow pace) to indicate the lower limit value is near.



Upon reaching the lower limit value, blue LED turns on and the buzzer changes to continuous pattern to signal tightening completion.



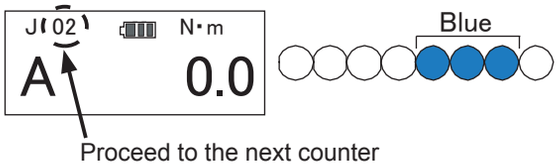
If it exceeds the upper limit value, the red LED turns on again, and the buzzer pattern turns to off-and-on (fast pace).



Press MEM key to judge if the tightened torque value is within the target range (In Auto Memory/Reset mode, judgement will be given automatically).

・OK: Measured data will be saved and proceed to the next counter.

・NG: Buzzer goes off and the red LED turns on for alarm.



Press MEM key again to save the measured data and proceed to the next counter.

Press C key to clear the data.

※ Peak Hold function will be ineffective when you tighten in the opposite direction.

Example） Lower limit value: 0 N・m

Blue LED at the target torque part will NOT turns on.

When it reaches 7.5% of the maximum torque capacity, the blue LED turns on and starts to move toward right.

③ Saving measured data

Measured data will be saved up to 50.

● Preset Tightening Mode:

Press MEM key, then the measured data will be saved and the counter will be forwarded to the next (In Auto memory/Reset mode, it will be forwarded automatically).

● Judgement Tightening mode

Press MEM key, then a judgement will be given (In Auto memory/Reset mode, judgement will be given automatically).

If the judgement is OK, the measured data will be saved and counter will be forwarded to the next.

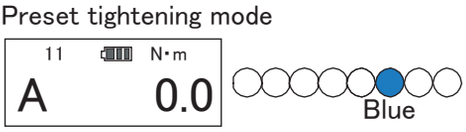
If the judgement is NG, buzzer goes off. Press MEM key again to save the measured data, or Press C key to clear the data.

※ Tightened torque data will not be saved in case of over-torque tightening (tightening beyond its capacity).

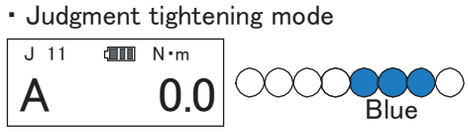
※ Auto memory/reset will be activated only when the torque reaches beyond the lower limit value. Also, if the target torque or upper/lower torque limit is set as Zero values, this function will not be active.

④ Reading out data

・Preset tightening mode



・Judgment tightening mode

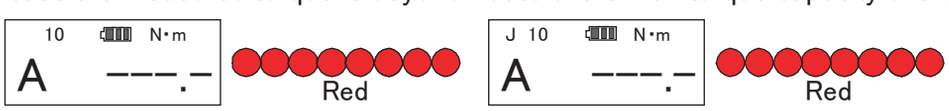


Press ▲ key to proceed to the next counter, press ▼ key to read out the measured data.

・In case of OK judgement

・In case of NG judgement

・In case the measured torque is beyond 105% of the max torque capacity of the torque wrench.



If you press ▼ key when the counter shows 01, it becomes 00 and enter RUN mode.

If you press ▼ key again when the counter is 00, the counter changes to 50 and reads out the measured data of that counter.

⑤ Output of the measured data

● Outputting one data

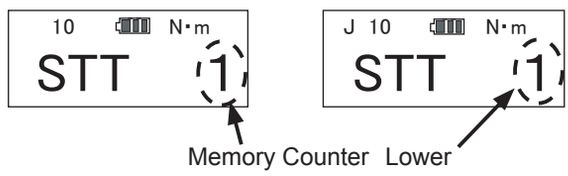
To output the measured data to PC, connect CPT to PC with the communication cable (No 585). Use ▲ ▼ key to select the data and press MEM key.

● Outputting selected range of data

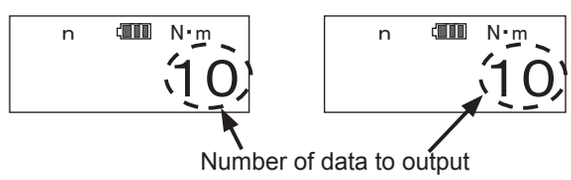
To output a selected range of data at one time, connect CPT to PC with the communication cable (No 585). Set the counter to the upper end of the selected range.

・Preset tightening mode ・Judgement tightening mode

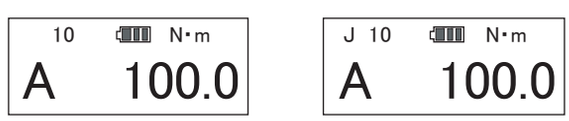
Keep MD key pressed for 2 seconds or more seconds, then it proceeds to below display.



Use ▲▼ key to set the counter to the lower end of the selected range of data and press MD key. The display shows the number of the selected data (Press C key to cancel).



Press MEM key to output the selected data at one time. Press C key to cancel and return to measuring mode.
After outputting the data, the display returns to the number of data to output. Press C key to return to measuring mode.
Press MEM key to output the data again.



⑥ Deleting measured data

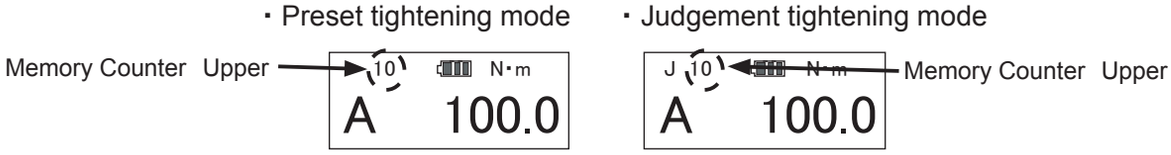
● Deleting one of data

To delete one of data, press ▲▼ key to select the data to delete, and press C key to delete it.

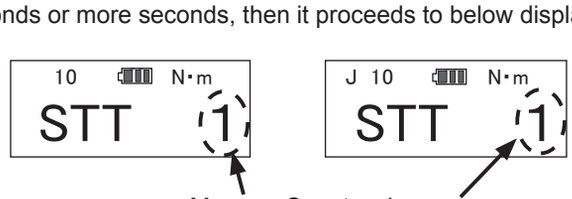
● Deleting selected range of data

To delete a range of data, please follow instructions below.
Use ▲▼ key to select the upper end of the data to delete.

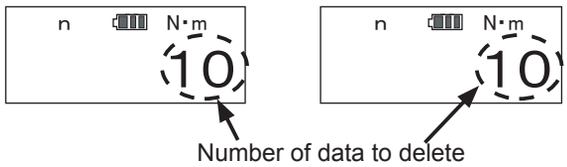
・Preset tightening mode ・Judgement tightening mode



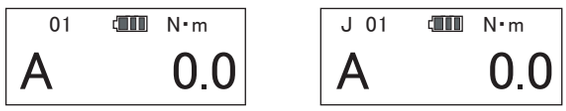
Keep MD key pressed for 2 seconds or more seconds, then it proceeds to below display.



Use ▲▼ key to select the lowest end of the data range to delete, and press MD key.
It shows the number of data to delete (Press C key to cancel).



Keep MD key pressed, and press C key, then the selected range of data will be deleted at one time.
The display returns to the measuring condition.

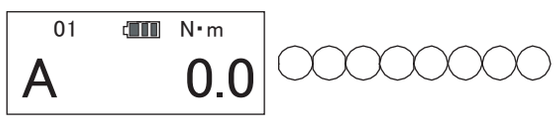


⑦ Inspection use by Re-tightening torque method/Loosening torque method (Peak Mode)

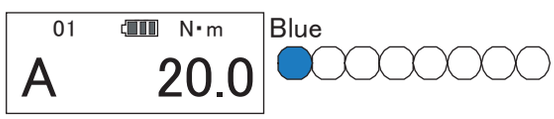
In Preset tightening mode or Judgement tightening mode, set the target and lower/upper limit torque to 0.
(Please refer to P19 for setting procedures.)

Example) Inspection by re-tightening method.

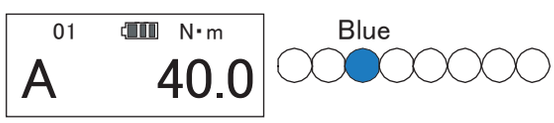
Retighten the already tightened bolt.（LED will not turn on at no loading condition.)



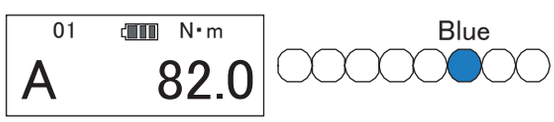
When it reaches 7.5% of the maximum torque capacity, the blue LED turns on.



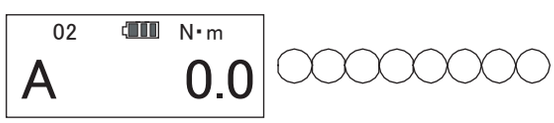
As torque increases, the blue LED moves toward right.



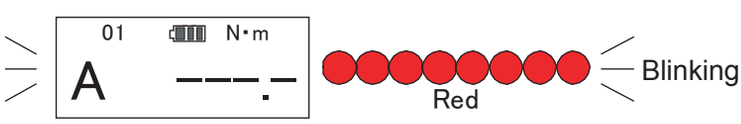
Stop tightening as the bolt starts to rotate again, and it reads out the torque value at that moment.



Press MEM key to save the data.
(If the set torque is Zero values, Auto memory/Reset is not effective.)
Press C key to clear the data.



Cautions)
In case you accidentally apply over 105% of the max capacity torque.
The applied torque value and ″----″ appears on LCD alternately while the red LED blinks and the buzzer goes off.
In this situation, data saving is not possible by pushing MEM key.



8. Various Settings

CPT has various kinds of modes and settings according to customer's usage.

Please refer to the table below for available modes and detailed functions of CPT.

① Settings

Common Settings

	Subject	Display	Delivery Condition	Select
1	Selecting Subject to Set	--	MODE-S	PARA_S
2	Measurment Mode	SEL	PRESET	JUDGE

Settings on Preset Tightening Mode

3	Target Range [%]	rAng	0%	0～10 %
4	Target Torque 10kinds	St	0	Below Max. Torque

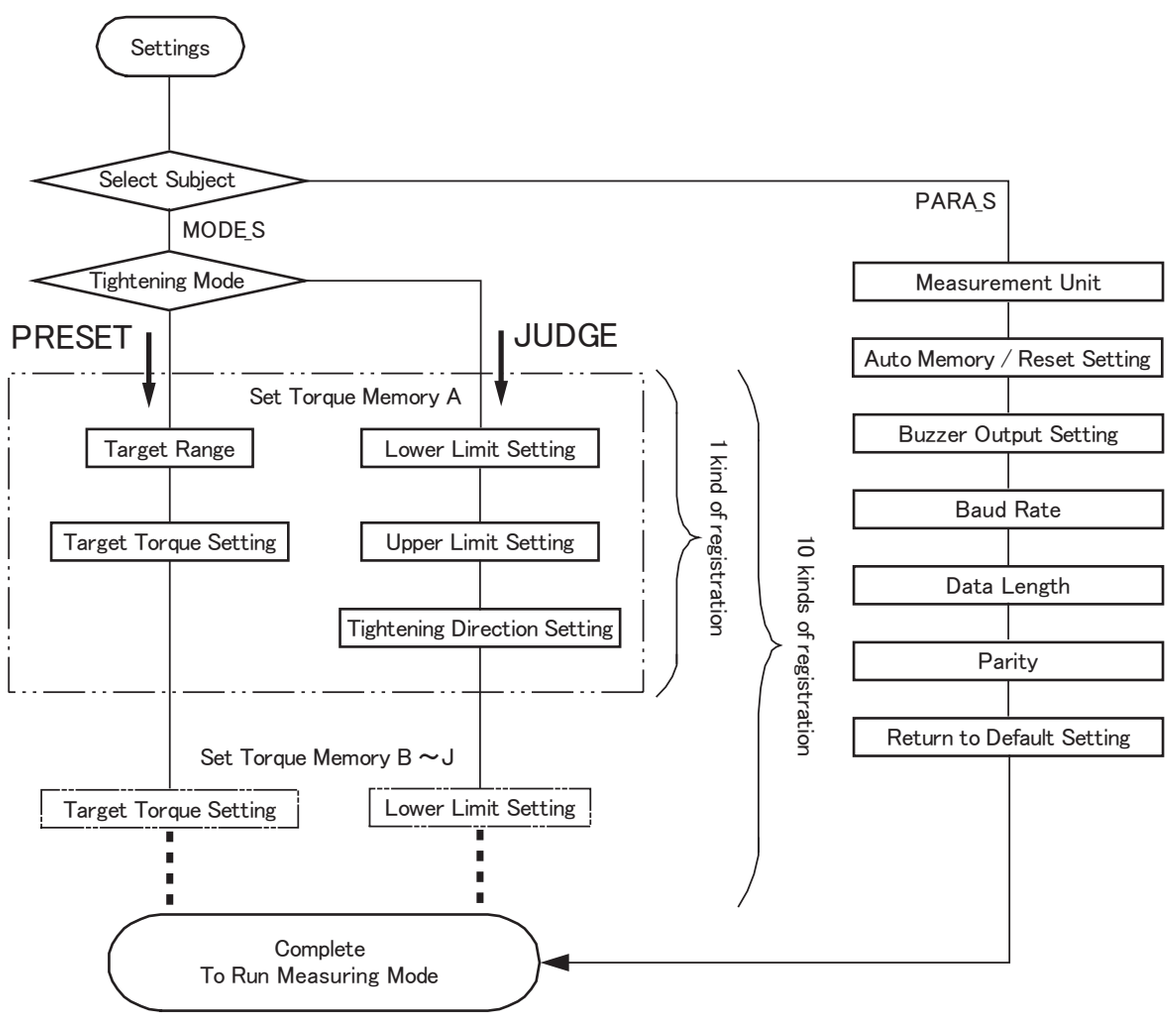
Setting on Judgement Tightening Mode

5	Lower Limit 10kinds	Lo	0	Below Upper Limit
6	Upper Limit 10kinds	HI	0	Below Max. Torque
7	Tightening Direction 10kinds	tUrn	CW	CCW

Other Parameter Settings

8	Measurement Unit	USEL	N･m	kgf･cm / kgf･m / lbf･in / lbf･ft
9	Auto Memory Reset Timer	Ar	0	0.0、0.1～5.0 sec
10	Buzzer Output	bU	ON	OFF
11	Baud Rate	bPS	2400	4800/9600/19200
12	Data Length	dL	7BIT	8BIT
13	Parity	Prt	NONE	ODD/EVEN
14	Setting Default	dFLt	DFLT-N	DFLT-Y

② Flow chart on settings



③ Setting on Preset tightening mode

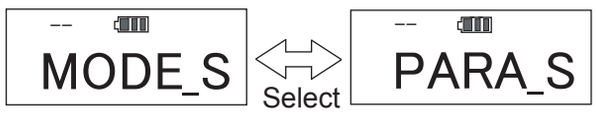
Use ▲▼ key to set the counter to 00 (RUN mode).

Keep MD key pressed for 2 seconds or more seconds, then it proceeds to the setting subject selection.

● Selecting setting subject

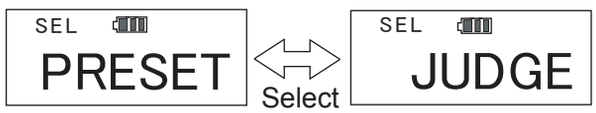
Select MODE_S（setting on tightening mode and torque setting）, or PARA_S（other parameter settings).

Use ▲▼ key to select MODE_S and press MEM key to proceed to the next.
Press MD key to proceed without saving. (Press C key to return to RUN measuring mode.)



● Tightening mode setting (Default: PRESET)

Use ▲▼ key to select "PRESET" and press MEM key to confirm. It proceeds to Data Clearance display shown below (If you press MD key, it proceeds to the next without saving. If you press C key it returns to RUN measuring mode).



● Data Clearance Confirmation

Press MEM key to save the tightening mode and proceeds to the next.
(Press C key to return to tightening mode setting).
If you do not want to change the tightening mode, you can skip the Data Clearance Confirmation.

※ When you change the tightening mode, tightening data will be cleared. Record the data in advance in necessary.

Data clearance

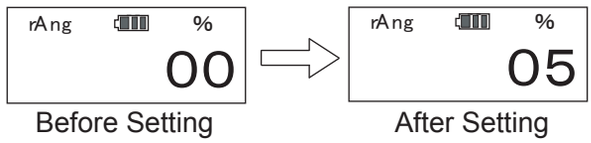
● Target range setting (Default setting: 0%)

Set the target torque range to be indicated by blue LED. Select target range by percentage (%) based on the target torque (select in 0-10% range).

Example: When target torque is 100N・m and Target range 5%, the actual range will be 100N・m-105N・m (The target range will be lit by blue LED).

Use ▲▼ key to select number and press MEM key to save and proceed to the next.

Press MD key to proceed without saving. (Press C key to return to RUN measuring mode).

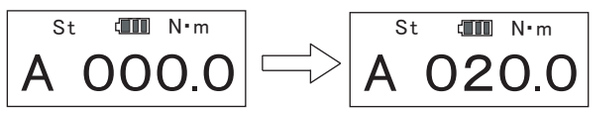


Before Setting　　After Setting

● Target torque setting （Default setting: 0）

Set the first target torque. 10 different torque values can be registered and each will be expressed in alphabet A-J on display.

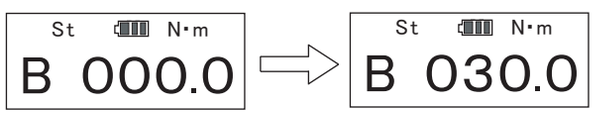
Press ▲ key to select digit and ▼ key to select number. Press MEM key to save and proceed to the next. (Press MD key to proceed without saving. Press C key to return to RUN measuring mode.).



Before Setting　　After Setting

In the same way as the first target torque setting, set the second "B", and all the way to the 10th "J". After completing 10th "J" setting, it returns to RUN measuring mode.

If you want quit on the way, press C key to return to RUN measuring mode.



Before Setting　　After Setting

④ Setting on Judgement tightening mode

Use ▲▼ key to set the counter to 00 (RUN measuring mode).

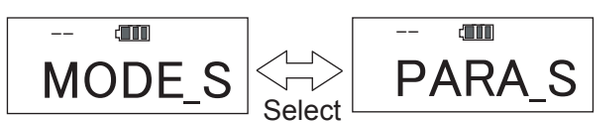
Keep MD key pressed for 2 seconds or more seconds to proceed to the setting selection.

● Selecting subject to set

Select MODE_S（setting on tightening mode and torque setting), or PARA_S（other parameter settings）.

Use ▲▼ key to select MODE_S and press MEM key to proceed to the next.

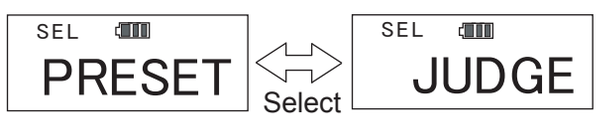
Press MD key to proceed without saving. (Press C key to return to RUN measuring mode.)



● Tightening mode setting

(Default setting: PRESET)

Using ▲▼ key to select "JUDGE", and press MEM key to confirm. (If you press MD key, it proceeds to the next without saving. If you press C key, it returns to RUN measuring mode)



● Data Clearance Confirmation

Press MEM key to save the tightening mode and proceeds to the next.
(Press C key to return to Tightening mode setting.)
Data clearance confirmation (below) will be skipped if the tightening mode is not changed.
Go to next Step.(Lower limit setting)

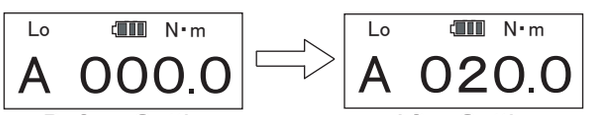
※ If you change the tightening mode, tightening data will be cleared. Record the data in advance, if necessary.

Data clearance

● Lower limit value setting (Default setting: 0)

Set the lower limit torque of the first setting torque.
10 different torque set can be registered and each will be expressed on display as A through J.

Use ▲ key to select digit and ▼ key to select number. Press MEM key to save and proceed to the next (Press MD key to proceed without saving. Press C key to return to RUN measuring mode.)

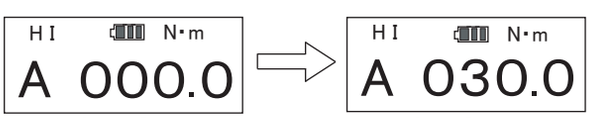


Before Setting　　After Setting

● Upper limit value setting (Default setting: 0)

Set the upper limit of the first target torque.

Use ▲ key to select digit and ▼ key to select number. Press MEM key to save and proceed to the next. (Press C key to return to RUN measuring mode.)

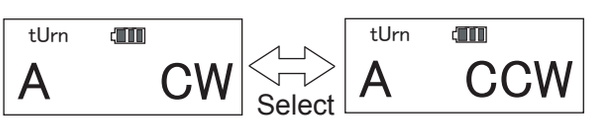


Before Setting　　After Setting

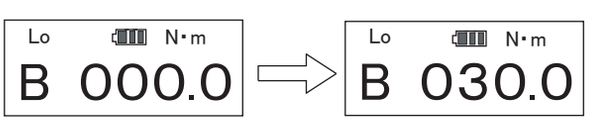
● Setting tightening direction (Default setting: 0)

Set tightening direction of the first setting torque.

Use ▲▼ key to select CW (clockwise) or CCW (counter-clockwise) and press MEM key to save and proceed to the next. (Press C key to return to RUN measuring mode.)



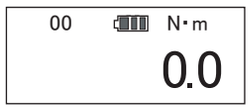
In the same way as the first torque setting, set the second "B", and all the way to the 10th "J". After completing 10th "J" setting, it returns to RUN measuring mode.
If you do not need to set the next torque, press C key to return to RUN measuring mode.



Before Setting　　After Setting

⑤ Other settings

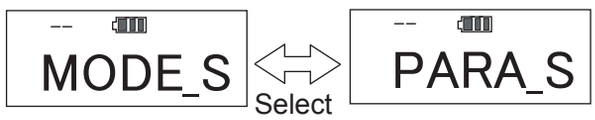
Use ▲▼ key to set the memory counter to 00 (RUN measuring mode).
Keep MD key pressed for more than 2 seconds till it the display changes.



● Selecting setting subject

Select MODE_S（setting on tightening mode and torque setting), or PARA_S (other parameter settings）.

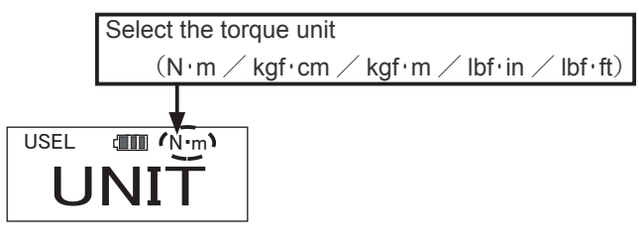
Use ▲▼ key to select PARA_S and press MEM key to save and proceed to the next.
(Press MD key to proceed without saving. Press C key to return to RUN measuring mode).



● Setting measurement unit (Default: N·m)

Select the torque unit
（N·m ／ kgf·cm ／ kgf·m ／ lbf·in ／ lbf·ft）
The measured torque and the set torque will be converted into the selected torque unit.

Use ▲▼key to select the torque unit and press MEM key to save and proceed to the next.
(If you press MD key, it proceeds without saving. If you press C key, it returns to RUN measurement mode).



Unit conversion table

	Conversion factores
N·m → kgf·cm	10.1972
N·m → kgf·m	0.101972
N·m → lbf·in	8.8508
N·m → lbf·ft	0.73756

Rounding of the converted figures

100.0[N·m] × 0.73756 ＝ 73.7~~56~~ ≒ 73.8[lbf·ft]
73.8[lbf·ft] ÷ 0.73756 ＝ 100.0~~5~~ ≒ 100.1[N·m]

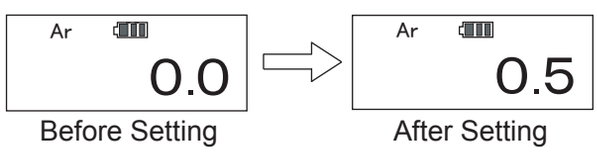
※ Converted figures are rounded as above.
Accordingly, the resulted figures may have a margin of errors.

※ Unit conversion is made based on N.m values with the above conversion factors.
※ All the memory and torque setting values are converted when making a unit change.

● Setting Auto memory/Reset timer (Default: 0.0)

Set Auto memory/Reset timer. After tightening completion, the auto memory function saves the data automatically after the set timing, and proceed to the next counter. (0.1 - 5 seconds）
If you set it to "00", then Auto memory/Reset function will be ineffective.

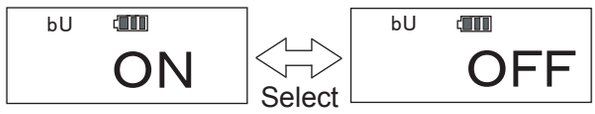
Use ▲▼ key to select the timing (second) and press MEM key to save and proceed to the next.
(Press MD key to proceed without saving. Press C key to return to RUN measuring mode.)



● Sound option (Default setting: ON)

Choose whether or not to activate sound on any tightening operations.

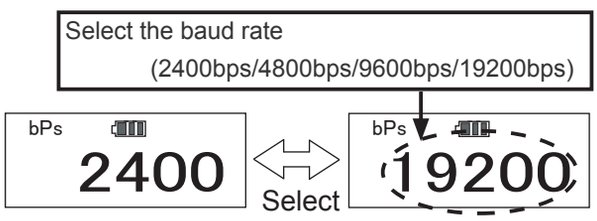
Use ▲▼ key and press MEM key to save and proceed to the next. (Press MD key to proceed without saving. Press C key to return to RUN measuring mode).



● Baud rate setting (Default: 2400bps)

Set the communication baud rate
(2400bps/4800bps/9600bps/19200bps)
Make sure to use the same baud rate between the devices when outputting the data.

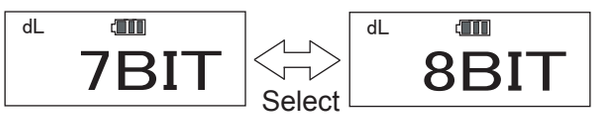
Use ▲ ▼ key to select the baud rate and press MEM key to save and proceed to the next.
(Press MD key to proceed without saving. Press C key to return to RUN measuring mode.)



● Data length setting (Default: 7 bit)

Set the communication data length (7 bit / 8 bit)

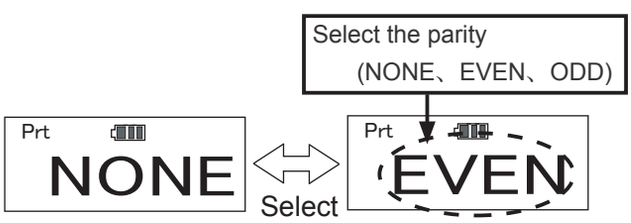
Use ▲▼ key to select the data length and press MEM key to save and proceed to the next.
(Press MD key to proceed without saving. Press C key to return to RUN measuring mode.)



● External output parity setting (Default: NONE)

Set the communication parity. (NONE、EVEN、ODD)

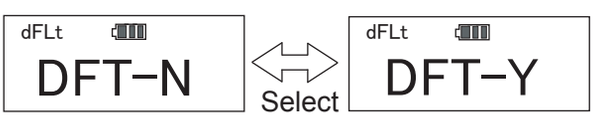
Use ▲ ▼ key to select the parity and press MEM key to save and proceed to the next.
(Press MD key to proceed without saving. Press C key to return to RUN measuring mode.)



● Return to default setting

Return all settings to the default setting conditions.

Use ▲▼ key to select DFT-Y and press MEM key. All the settings will return to the default setting conditions. (If you press MEM key, MD key or C key at "DFT-N" condition, it returns to RUN measuring mode without saving.)



9. External Output

① Communication settings for external output

Synchro system : asynchronous communication method
Baud rate : 2400/4800/9600/19200bps
Data length : 7bit/8bit
Stop bit : 1 bit
Parity : NONE / EVEN / ODD

② PC output

Connect CPT to PC with the dedicated communication cable (No.585). Set the PC's baud rate in line with CPT setting.

※ Communication cable (No.585) is sold separately.

External output format

○Preset tightening mode

R	E	,	5	0	,		1	0	0	.	0	CR	LF

Header — Counter(2fig.) — Torque(Decimal point) — Delimiter

CW : Blank、CCW : Minus (-)

Alphabetical symbol for the set torque. If the torque is zero, it shows "-".

○Judgement tightening mode

R	E	,	5	0	,		1	0	0	.	0	,	A	,	O	K	CR	LF

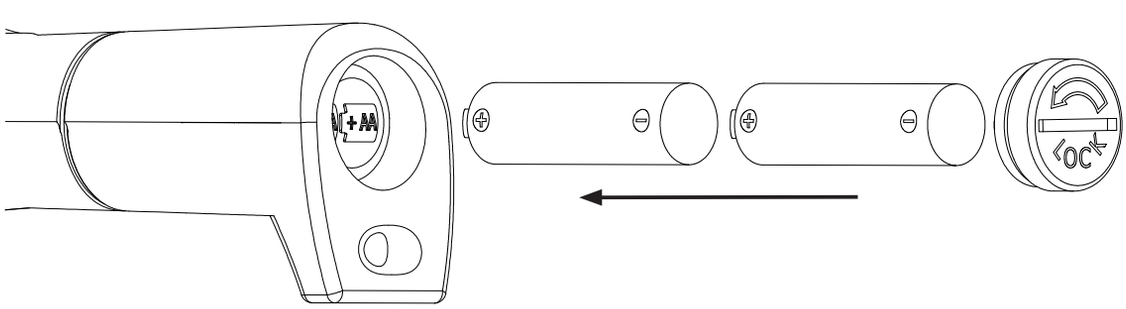
Header — Counter(2fig.) — Torque(Decimal point) — Delimiter

Judgement result : "LO","OK","HI".When the set torque is zero, or tightening torque is zero, it shows "--".

10. Battery

Insert AA batteries (2pc) inside the handle of the main body.
Please be careful not to place them at wrong polarity (see below illustration).
Both nickel-hydrogen battery and alkaline battery can be used.
However, nickel-hydrogen battery is more recommendable (See below ※).
Please refrain from using a new and old battery together, or different type of batteries at the same time in order to maintain stable performance.

※ Nickel-hydrogen battery and alkaline battery have different final voltage.
CPT indicates battery shortage by showing "LOBATT" based on rechargeable nickel-hydrogen battery voltage.
Therefore, when using alkaline batteries, it may show the "LOBATT" display before using up the batteries.



11. Error Message

Error message will appear in malfunction of Auto Zero function activated by C key. In addition, the key check function will be activated when POWER is turned on at OFF condition, or when Reset switch is used.

- Err1 : Appears if Power is turned on or Reset Switch is pushed while ▲ key is being ushed.
- Err 2 : Appears if Power is turned on or Reset Switch is pushed while ▼ key is being pushed.
- Err 3 : Appears if Power is turned on or Reset Switch is pushed while MEM key is being pushed.
- Err 4 : Appears if Power is turned on or Reset Switch is pushed while C key is being pushed.
- Err 5 : Appears if Power is turned on or Reset Switch is pushed while MD key is being pushed.
- Err 8 : Malfunction of data memory.
- Err 9 : Malfunction of the torque sensor or circuit board.

《In case of Err 1-5》

Error of the membrane switch

◎ Turn off the power once and turn it on without touching any other keys.

- If Err disappears, it should work properly.
- If Error does not disappear, it needs to be repaired. Please contact TOHNICHI MFG.CO.,LTD. or your nearest distributor.

《In case of Err 8》

- Malfunction of data memory.
- It needs to be repaired. Please contact TOHNICHI MFG.CO.,LTD. or your nearest distributors.

《In case of Err 9》

Malfunction of the torque sensor or circuit board.

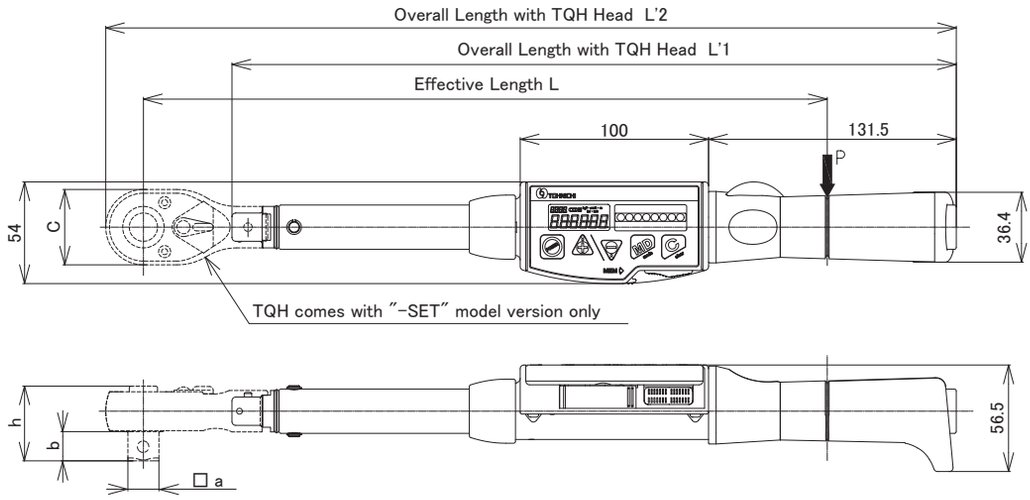
◎ Push Clear key at no loading condition.

- If Err 9 disappears, it should work properly.

If Err 9 remains, it needs to be repaired. Please contact TOHNICHI MFG.CO.,LTD. or your nearest distributors.

12. Specifications

Common Specifications



Accuracy ±3%

Model	Torque Range									
	[N.m]		[kgf.cm]		[kgf.m]		[lbf.in]		[lbf.ft]	
	Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	Grad.
CPT20x10D-G	4.00 - 20.00	0.02	40.0 - 200.0	0.2	0.400 - 2.000	0.002	36.0 - 180.0	0.2	3.00 - 14.50	0.02
CPT50x12D-G	10.00 - 50.00	0.05	100.0 - 500.0	0.5	1.000 - 5.000	0.005	100.0 - 440.0	0.5	7.50 - 36.00	0.05
CPT100x15D-G	20.0 - 100.0	0.1	200 - 1000	1	2.00 - 10.00	0.01	200 - 880	1	15.0 - 73.0	0.1
CPT200x19D-G	40.0 - 200.0	0.2	400 - 2000	2	4.00 - 20.00	0.02	360 - 1700	2	30.0 - 150.0	0.2
CPT280x22D-G	56.0 - 280.0		560 - 2800		5.60 - 28.00		500 - 2400		42.0 - 200.0	

Model	Dimension							Weight	Interchangeable Heads
	L	L'1	L'2	□a	C	h	b		
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	
CPT20x10D-G	245	280.5	330	9.5	32	32	11	0.63	(SH (-N),RH,QH,DH,HH)10D
CPT50x12D-G	254	282.5	339	9.5	32	32	11	0.65	(SH,RH,QH,RQH,DH,HH)12D
CPT100x15D-G	363	384.5	452	12.7	40	40	15.5	0.85	(SH,RH,QH,RQH,DH,HH,FH)15D
CPT200x19D-G	467	475.5	556	12.7	40	40	15.5	1.37	(SH,RH,QH,RQH,DH,HH,FH)19D
CPT280x22D-G	600	591.5	700	19	63	55	23	1.76	(SH,RH,QH,RQH,DH,HH,FH)22D

- "Weight" does not include the weight of interchangeable head TQH and batteries.
- "Torque Wrench Only" version is provided in basic carton product box and does not include TQH head, Batteries, Strage Case, or Product Box.

Model	Standard Accessories				
	Ratchet Head		Battery	Storage Case	Product Box
	Model	Sq. Drive [mm]			
CPT20x10D-G-SET	TQH10D	9.5	AA Alkaline Battery (2pcs)	Small	Small
CPT50x12D-G-SET	TQH12D				
CPT100x15D-G-SET	TQH15D	12.7			
CPT200x19D-G-SET	TQH19D			Large	Large
CPT280x22D-G-SET	TQH22D	19.0			

Torque Accuracy	±3% of Indicated Value
Display/Charactor Height	14 Segment LCD 6 Figures / 7mm
	7 Segment LCD 4 Figures / 3mm
Battery Display	4 Steps
Data Memory	50
Set Torque Memory	PRESET Mode: 10
	JUDGE Mode: 10
Basic Functions	Auto Power Off (3 Minutes)
	Auto Memory / Reset
	Auto Zero
	Over Torque Alarm
Communication Functions	RS232C Accordance
Power	AA Battery x 2pcs
Continuous Usage	Approx. 40 Hours
Usage Temperature	0-40 Celsius below 85% RH (no condensation)

Designs and specifications are subject to change without notice.

Your Torque Partner
TOHNICHI

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