

# MEASURING EQUIPMENT

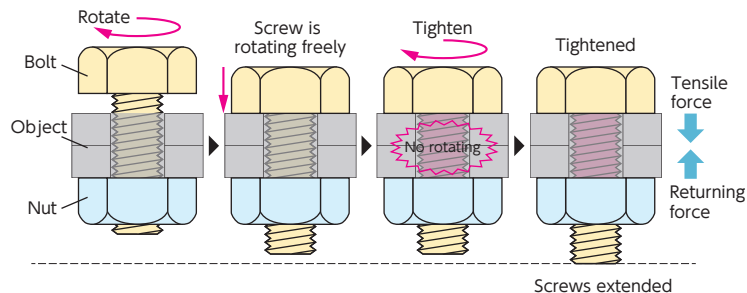
DIGITAL TORQUE WRENCHES	410
TORQUE WRENCHES	423
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# Mechanism of screw fastening

Torque in screw fastening is related to the rotational force applied to a screws. We have to study the mechanism of screw fastening first to understand the torque on the screws.

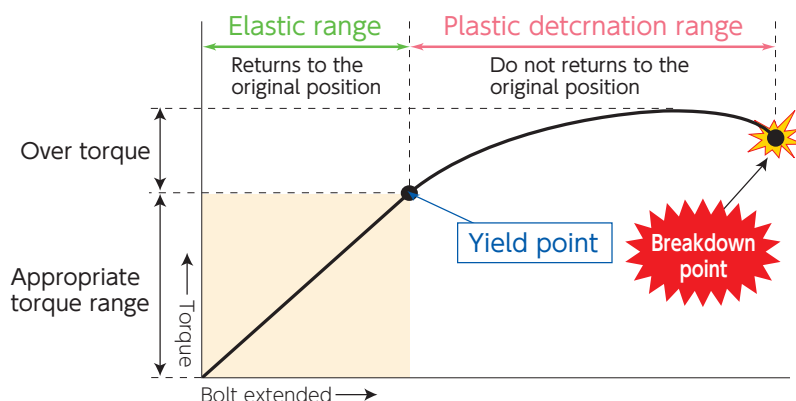
## Mechanism of screw fastening

Tightened bolt does not loosen easily for the force on the bolt that tries to restore on it. When a bolt is tightened, a tensile force is applied to it. The stretched bolt tries to return to its original position like a spring and compresses the part (parts, etc.) to which it is tightened. When bolt being tightened (fixed), the tension force and the return force on the bolt are even.



## What happens to the screw continuously tightened?

When the tightened bolt is loosened, the stretched bolt returns to its original position. However, if the tightening force is increased, the bolt will not completely return to its original position after a certain point. This point is called the "yield point" and the force range where the bolt returns to its original position is called the "elastic range" and the range over the elastic range "plastic range". The range where the bolt completely returns to its original shape is called the "plastic deformation range". If the bolt is continuously tightened over the plastic deformation range, the bolt will breakdown. This breakdown point is called the "breaking point".



### Column Elastic and Plastic detcrnation range

Examples of clips in the elastic and plastic deformation ranges.

After 5 paper are clipped



After 20 paper are clipped



After 50 paper are clipped



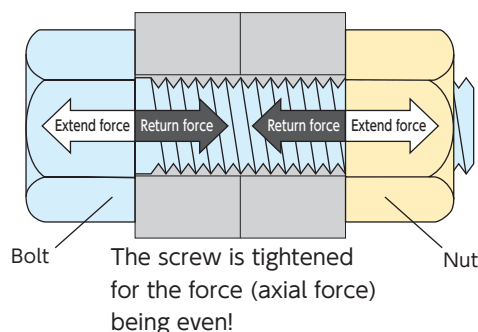
**Tightening a screw means stretching a screw.**

As shown in the example of the clip, the screw is stretched when it is tightened. After it reaches the plastic deformation range, the bolt will not be able to return to its original position completely. After several over force tightening, the returning force (axial force) to the original position becomes weaker, and the screw will loosen easily, or it will be broken in the worst case.

**Axial forces management is needed.**

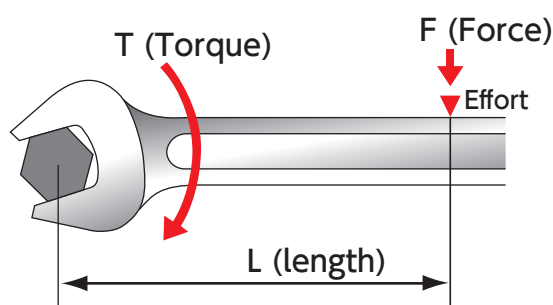
When a bolt reaches the plastic deformation range, the ratio of bolt extension becomes larger than tightening force but it is difficult for worker to know it. In addition, it is not easy to find which bolts are deformed from the appearance.

Tightening a screw = Stretching a screw



**Axial force and torque**

Torque is the rotational force shown as "T" when a force "F" is applied at a point "L". In other words, torque is a rotational force, not an axial force. The torque method is used as an alternative measuring way for axial force by calculating rotational force.



**T (Torque) = F (force) × L (length)**

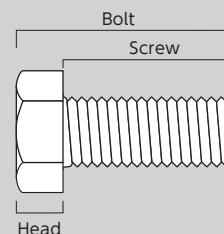
For example, when a force of 100 N (approx. 10 kgf) is applied to a force point 1 m from the rotating shaft, the torque is 100 N·m (approx. 10 kgf·m).

**Screw loosening mechanism**

Screw stretches and shrinks always when it is tightened. If the screw is over-tightened, the stretch and the pinching force become weaker. If the bolt is not tightened enough, vibration and heat from the surroundings will break this balance to be loosened. In case the screw is over tightened, the fastened object (parts, etc.) or the screw itself will be broken.

**Column Screws and Bolts**

The name "screw" is used as a common name of fasteners such as bolts and cap screws (hexagon socket cap screw), but it means the threaded part of the bolt. A "bolt" is used for a screw with a head for turning.



**1kgf·m=9.8067N·m**

**1kgf·m≐10N·m**

**1N·m≐0.1kgf·m**

# Types and Features of Torque Wrench

Torque wrenches are tools for tightening bolts, nuts, and other screws to a specified torque. It is classified as a measuring equipment and it is used as a tightening tool at a specified torque.

## Mechanical

Torque is measured by mechanical way such as springs, cams, and pivots.



**TORQUE WRENCH PRE-SET TYPE**  
(☛ P.424-430)



**TORQUE WRENCH PRE-LOCK TYPE (single function)**  
(☛ P.431-432)



**TORQUE WRENCH DIAL TYPE**  
(☛ P.433)

## Digital

Torque is measured by electrical sensor.



**DIGITAL RATCHET**  
(☛ P.411-422)



**DIGITAL RATCHET [MEMORQ]**  
(☛ P.037-050)



**TORQULE (TRASAS series)**  
(☛ P.032-033)

## Features per type

Comparison items		Type	Mechanical			Digital		
			Preset type	Pre-locked type (single function type)	Dial type	DIGITAL RATCHET	DIGITAL RATCHET [MEMORQ]	TORQULE
Continuous operation	Continuous work at a single torque value in production line, etc.		◎	◎	△	○	○	○
Versatility	Need to change the torque value depend on each operation or measuring object		△	×	○	◎	◎	○
Fastening check results and inspection	Measurement results can be displayed, easy to manage torque values.		×	×	◎	◎	◎	◎
Measurement accuracy	Less variation in work results regardless of the worker's level		△	△	◎	◎	◎	◎
Traceability	Record the results and trace work results		×	×	×	×	◎	◎
System connection	Connect production and quality control systems and manage work procedures or instructions		×	×	×	×	◎	◎
Installation cost	Initial cost		○	◎	△	◎	△	○
Features			When the preset torque value is reached, a light shock is felt in the hand and a "click" sound is heard. The torque setting can be changed for multi-purpose use.	When the preset torque value is reached, a light shock is felt in the hand and a "click" sound is heard. The fixed torque prevents mistakes in torque setting.	The dial scale and needle display the tightening result. Measurement in CW and CCW. Easy to use for inspection and measuring.	Digital display of torque value. When the set torque value is reached, the operator is notified with sound and light. Both CW and CCW directions can be measured, and there are many functions such as unit conversion.	Added the function to record measurement data in DIGITAL RATCHET and transfer it to a computer devices. Useful for operations that require work result recording, such as quality control.	Simply install the dedicated software on computer devices and attach it to any tools to use them as digital torque wrenches.

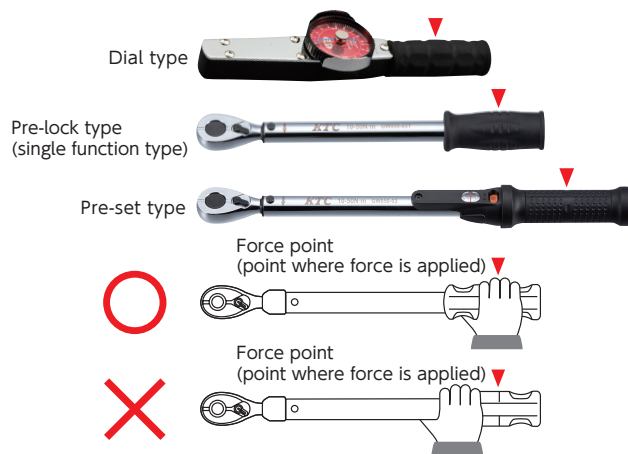
\*Sound may not be heard depending on the set torque and individual product.

# How to use the torque wrench

Although torque wrenches can be used for normal tightening work, they are only a measuring equipment. Torque management is only possible when used correctly.

## Torque wrenches are important to apply force in the correct position!

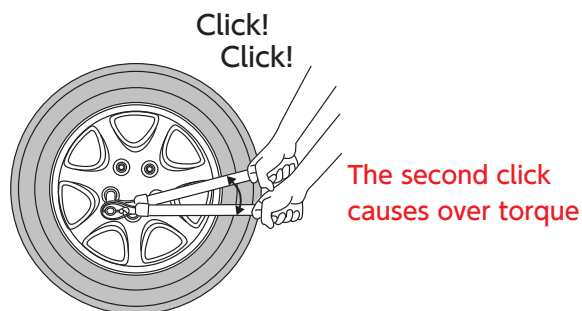
Torque is calculated by the distance (effective length) from the center of rotation axis to the point where force is applied (force point) and the force value. Since torque is not calculated accurate if the distance from the rotation axis to the force point changes, force must be applied at the force point of the wrench (usually the center of the grip).  
(P.409)



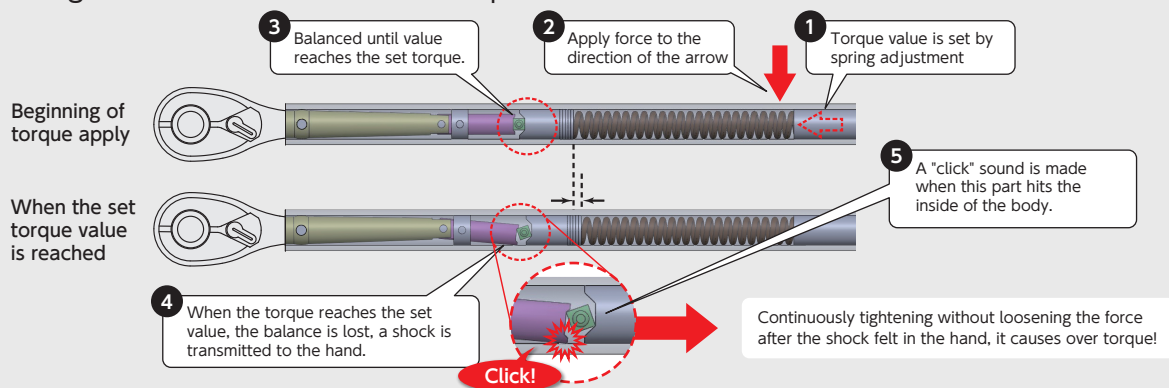
## Repeating click sounds during tightening must be avoided

When the preset torque value is reached, a light shock is felt in the hand and a "click" sound is heard. If you continue to apply force after the shock to your hand, turn the wrench continuously, or repeat the "click" sound two or more times, a force greater than the set torque will be applied. If you are not sure if you have tightened the bolt correctly, loosen the bolt without repeating the "click" and then tighten it again with a torque wrench.

\*1 Sound may not be heard for the setting torque and/or product specification.  
\*2 Do not use a torque wrench to loosen the bolts.



## Measuring Mechanism with a Preset Torque Wrench



\*Sound may not be heard depending on the set torque and individual product.

## Torque wrench is a precision equipment! Shock is strictly prohibited. Handle with care!

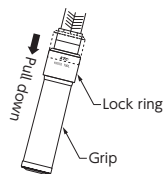
Torque wrenches are precision measuring equipment that are vulnerable to vibration and shock. To do accurate measuring, must be handled carefully than other conventional hand tools.



■ Torque wrench pre-set type (CMPC series)

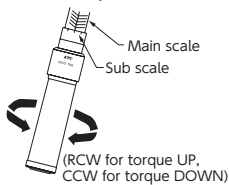


(1) Unlocked



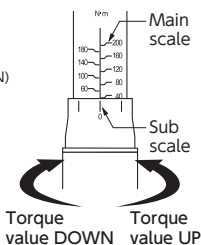
Lock released pulling down lock ring and the grip can be rotated.

(2) Torque value setting

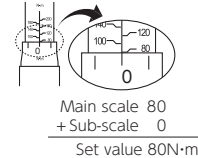


Turn the grip with the lock ring pulling down and set the torque value with the main and secondary scales.

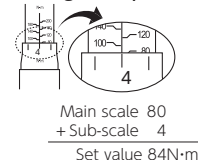
- One rotation of the grip (sub scale) changes the main scale by 1 digit.
- The torque value is set with the main scale + sub scale.



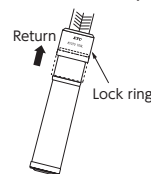
Setting example 1



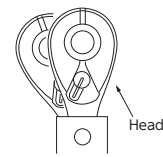
Setting example 2



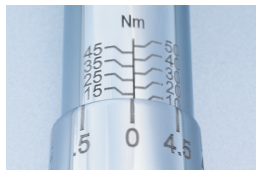
(3) Fixed torque value (4) Measuring



When the lock ring is released from the hand, it automatically returns to the original position and the torque value is fixed.



When torque reaches the set value, the angle of the head changes with a shock.



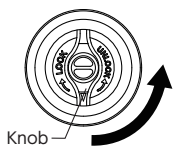
■ Torque wrench pre-set type (GW series)



Product Introduction Video

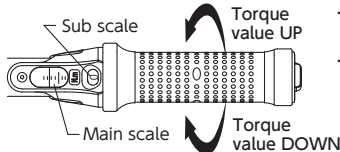


(1) Unlocked



Turn the knob 90 degrees to CCW.

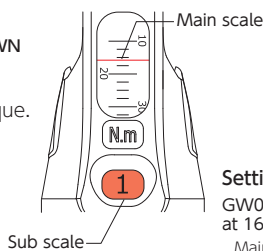
(2) Torque value setting



Turn the grip to set the main and sub scale to the setting torque.

(CW for torque UP, CCW for torque DOWN)

- One rotation of the grip (sub scale) changes the main scale by 1 digit.
- The torque value is set with the main scale + sub scale.



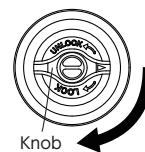
Setting Example

GW050-03 set at 16N·m

Main scale 15  
+ Sub scale 1

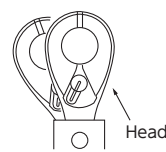
Set value 16N·m  
\*The main scale of GW050-03 is 1 graduation = 2.5

(3) Fixed torque value



Turn the knob 90 degrees to CW.

(4) Measuring



When torque reaches the set value, the angle of the head changes with a shock.



■ Torque wrench pre-lock type (GW series)

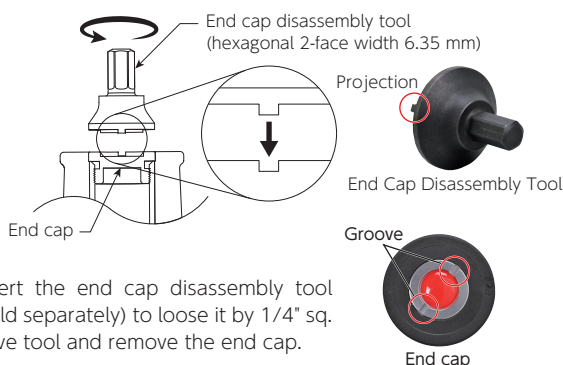


Product Introduction Video



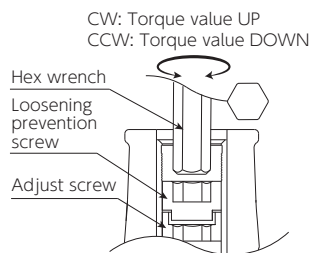
- \* The smallest torque is set under guarantee when shipped from us.
- To change torque setting, end cap disassembly tool (sold separately) and a torque wrench tester are required.
- \* Advance torque setting service is available.
- \* Please prepare a torque wrench tester if you set by yourself.

(1) Remove end cap



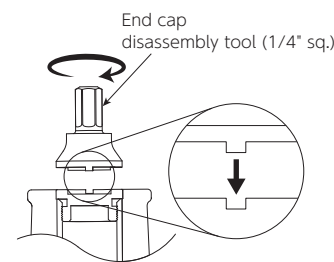
Insert the end cap disassembly tool (sold separately) to loose it by 1/4" sq. drive tool and remove the end cap.

(2) Torque setting



Turn the adjusting screw with a 6 or 8 mm hex. wrench to set the torque.  
\*Torque scale is not indicated. Please check the set torque with a torque wrench tester.

(3) End cap installation



Install end cap.  
\*Please refer to the instruction manual for details on the torque adjustment.



## How to Use TORQULE

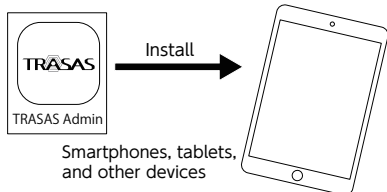
Product Support Page

### (1) Prepare devices

Install the dedicated application "TRASAS Admin"<sup>\*1</sup> on your iOS or Android device and make settings<sup>\*2</sup>.

<sup>\*1</sup> The application can be downloaded from KTC Web site [ktc.jp/download](http://ktc.jp/download) from App Store or Google Play.

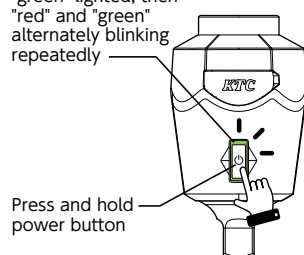
<sup>\*2</sup> Bluetooth function, storage and location information must be active (for Android). Please refer to the user's manual for details.



Smartphones, tablets, and other devices

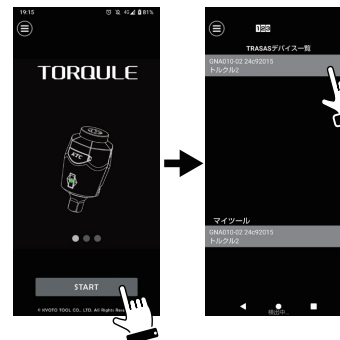
### (2) Turn on the TORQULE

LED lamp "green" lighted, then "red" and "green" alternately blinking repeatedly



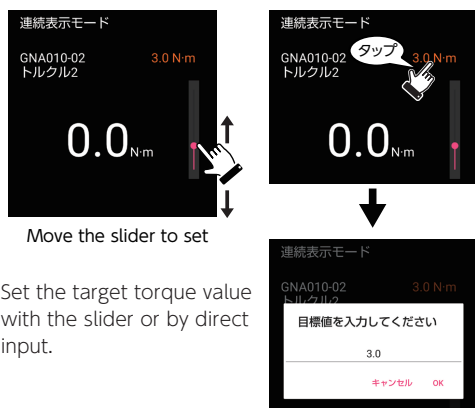
Press and hold power button

### (3) Pairing the device with TORQULE



Select TORQULE from the list of TRASAS devices and tap the START button to display the devices that can be connected.  
<sup>\*1</sup> It may take some time to display the device.

### (4) Torque value setting



Move the slider to set

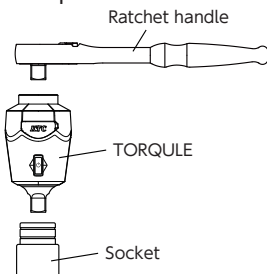
Set the target torque value with the slider or by direct input.

Tap target value and enter directly

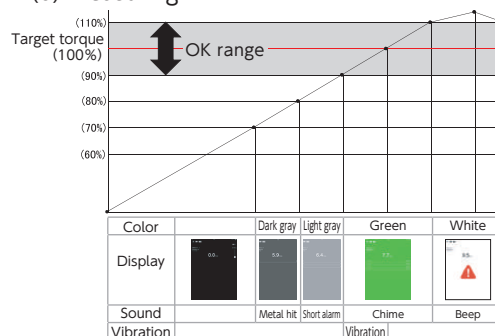
### (5) Mounting tools on the TORQULE

Select tools such as ratchet handles, sockets and so on to combine with TORQULE.

Example



### (6) Measuring



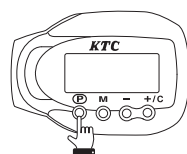
When the tightening torque approach the target torque, the display begins to warn the operator with color and sound, and at 90% of the set torque, chime sound is provided and the screen turns green. (At 90% of the set torque, the screen changes to green (vibrating devices will vibrate). 110% of the target torque is exceeded, the screen changes to a warning display, and a beep sound is provided.



## How to use DIGITAL RATCHET (in pre-set mode)

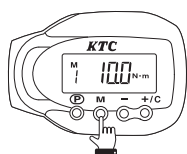
Product Introduction Video

### (1) Turn on the power



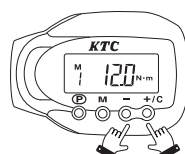
Press P to turn on the power.

### (2) Memory number selection



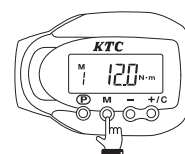
Press M to select the memory number (a number to store the set torque, up to 5 can be registered).

### (3) Target torque setting



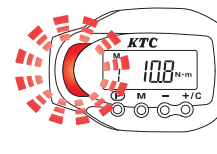
The "+/C" and "-" buttons are used to set the target torque value.

### (4) Target torque registration



Press and hold the "M" button to register the torque value.

### (5) Measurement work



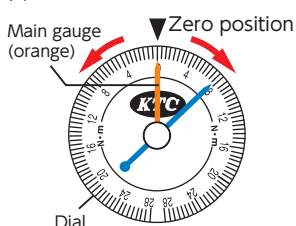
pi pi pi  
pi pi pi  
beep!

Perform the tightening operation. When 90% of the set torque is reached, the buzzer beeps and the LED blinks.

## How to use the dial type torque wrench

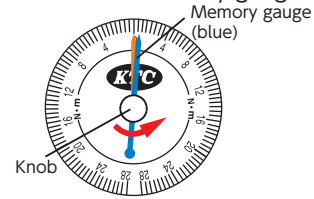
### Right hand rotation torque measurement

#### (1) Set the main needle to zero.



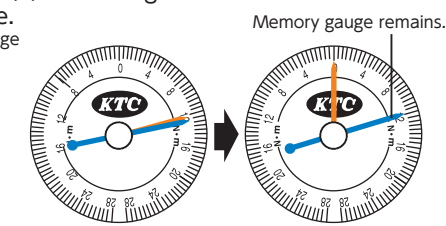
Turn the dial and set the main gauge (orange) to the zero position on the scale.

#### (2) Align the main gauge with the memory gauge.



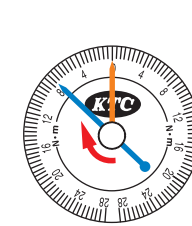
Turn the knob CCW to align the memory gauge (blue) with the main gauge (orange).

#### (3) Measuring



When tightening, the main gauge and the memory gauge continue to point to the torque value, so tighten until torque value reaches the target value. When the tightening operation is completed, the main needle returns to zero, and the memory gauge remains at the tightened torque value.

### Measuring torque by CCW



To measure the torque of CCW direction, turn the knob CW direction and align the memory gauge with the left side of the main gauge.

## How to store and maintain torque wrenches

Torque wrenches are measuring equipment. To maintain measurement accuracy, they should be handled with care than ordinary conventional hand tools. If any issues are found, please calibrate and/or repair it.

### Stored at the lowest torque value in the measurable torque range

Storing a pre-set type torque wrench with force applied to the internal spring can cause a loss of measurement accuracy. In order to minimize the denting of the internal spring, the set torque value should be set to the lowest value in the measuring range during storage.

### Store in the case provided, avoiding high temperature, high humidity, and dust!

Rust, dust, and other factors may cause a loss of measurement accuracy. Check the tools before using every time. After use, store the equipment in the provided plastic case and keep it away from high temperatures, high humidity, and dusty places.

### Check accuracy at least once a year.

Periodically (recommended at least once a year), check the accuracy (calibration and adjustment if necessary). Calibration\* is the process of checking and confirming the accuracy of the torque wrench with a torque tester. If deviations are found, repairs or adjustments should be made to restore measurement accuracy.

For information on torque wrench calibration service, P.025.

## Inspection report and calibration certificate

### Inspection report

The inspection report is issued for the following products and indicates the results of inspection of product accuracy and performance based on KTC's standards.

- Preset type torque wrenches  
(CMPB0152 to CMPB8008, CMPC0152 to CMPC3004, GW010-02 to GW1000-08, TGW010103 to TGW300202)
- Pre-locked torque wrenches (GW010-02T to GW300-04T)
- Torque wrenches dedicated to wheel mounting (WCMPB120, WCMPB140)
- Wheel nut torque wrenches (WCMPA085 to WCMPA108)
- Dial type torque wrenches (CMD0091 to CMD353)
- Insulated torque wrenches (ZGWPA30550, ZGWPA20525)
- Preset type torque screwdrivers (GDP-080 to GDP-450)

TORQULE (GNA10-02 to GNA200-04) do not come with an inspection report, but you can download the report from the Production No. or Serial No.

→ <https://ktc.jp/download> (TORQULE support page)



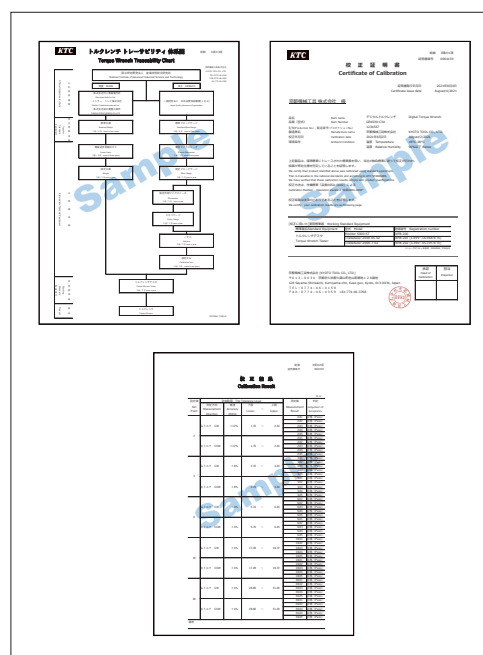
Inspection report

### Certificate of Calibration

A calibration certificate certifies that the values indicated by a measuring equipment have been calibrated using a measuring equipment based on a world standard.

Calibration certificates are issued to the following products

- DIGITAL RATCHET series (all models except the old type whose part number begins with GWE)
- DIGITAL RATCHET [MEMORQ] series (all models)
- TORQULE (GNA1000-06, GNA1000-08, GNA2000-08)
- Torque Checker (all models)



Certificate of Calibration



# Torque Measuring Range

## Torque wrench pre-set type [CMPB, CMPC series] / Torque driver pre-set type [GDP series].



Type/Drive size	Part No.	Measuring unit	Measuring range	cN·m N·m	200	400	600	800	1000	2500	5000	7500	10000	12500	15000	17500	20000	22500	25000	27500	30000	40000	60000	80000	100000	
					2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000	
Drive	GDP-080	cN·m	16~80																							
	GDP-200		40~200																							
	GDP-450		90~450																							
1/4"sq.	CMPC0152	N·m	3~15																							
3/8"sq.	CMPC0253		5~25																							
	CMPC0503		10~50																							
	CMPC1003		20~100																							
1/2"sq.	CMPC0504		10~50																							
	CMPC1004		20~100																							
	CMPC2004		40~200																							
	CMPC3004		60~300																							
3/4"sq.	CMPB8006		160~800																							
1"sq.	CMPB8008		160~800																							

## Torque wrench pre-set type [GW series]



Type/Drive size	Part No.	Measuring unit	Measuring range	N·m	2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000	
					2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000	
1/4"sq.	GW010-02	N·m	2~10																							
	GW025-02		5~25																							
3/8"sq.	GW010-03		2~10																							
	GW025-03		5~25																							
	GW050-03		10~50																							
	GW100-03		20~100																							
1/2"sq.	GW100-04		20~100																							
	GW200-04		40~200																							
	GW300-04		60~300																							
3/4"sq.	GW600-06		100~600																							
	GW800-06		150~800																							
	GW1000-06		200~1000																							
1"sq.	GW1000-08	200~1000																								

## Torque wrench pre-set type [GW series interchangeable head].



Type/Drive size	Part No.	Measuring unit	Measuring range	N·m	2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000	
					2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000	
9x12 14x18	GW010-X0912	N·m	2~10																							
	GW025-X0912		5~25																							
	GW050-X0912		10~50																							
	GW100-X0912		20~100																							
	GW100-X1418		20~100																							
	GW200-X1418		40~200																							
	GW300-X1418		60~300																							

## Torque wrench pre-lock type [GW series]



Type/Drive size	Part No.	Measuring unit	Measuring range	N·m	2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000	
					2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000	
1/4"sq.	GW010-02T	N·m	2~10																							
	GW025-02T		5~25																							
3/8"sq.	GW025-03T		5~25																							
	GW050-03T		10~50																							
1/2"sq.	GW100-04T		20~100																							
	GW200-04T		40~200																							
	GW300-04T		60~300																							

■ Torque wrench dial type [CMD series]



Type/Drive size	Part No.	Measuring unit	Measuring range	N·m	2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000	
1/4"sq.	CMD0091	N·m	1.8~9																							
	CMD0172		3.5~17.5																							
3/8"sq.	CMD0282		6~28																							
	CMD072		14~70																							
1/2"sq.	CMD143		30~140																							
	CMD243		50~240																							
	CMD353	70~350																								

■ DIGITAL RATCHET [Rechargeable (GEKR)/Battery-powered (GEK, GLK) series]



Type/Drive size	Part No.	Measuring unit	Measuring range	cN·m N·m	200	400	600	800	1000	2500	5000	7500	10000	12500	15000	17500	20000	22500	25000	27500	30000	40000	60000	80000	100000	
Drive	GLK060	cN·m N·m	12~60																							
	GLK250		50~250																							
	GLK500		100~500																							
1/4"sq.	GEKR030-R2A	N·m	2~30																							
	GEK030-R2		6~30																							
	GEKR030-R2		6~30																							
3/8"sq.	GEK030-C3A		2~30																							
	GEKR030-C3A		2~30																							
	GEK030-C3		6~30																							
	GEKR030-C3		6~30																							
	GEK060-R3		12~60																							
	GEKR060-R3		12~60																							
1/2"sq.	GEK085-R3		17~85																							
	GEKR085-R3		17~85																							
	GEK085-R4		17~85																							
	GEKR085-R4	17~85																								
	GEK135-R4	27~135																								
	GEKR135-R4	27~135																								
Adjustable type	GEK200-R4	40~200																								
	GEKR200-R4	40~200																								
	GEK085-W36	17~85																								
	GEKR085-W36	17~85																								
	GEK135-W36	27~135																								
	GEKR135-W36	27~135																								
Head exchange type	GEK200-W36	40~200																								
	GEKR200-W36	40~200																								
	GEK040-X13	8~40																								
	GEKR040-X13	8~40																								
1"sq.	GEK085-X13	17~85																								
	GEKR085-X13	17~85																								

■ TORQUE



Type/Drive size	Part No.	Measuring unit	Measuring range	N·m	2	4	6	8	10	25	50	75	100	150	200	300	400	600	800	1000	1200	1400	1600	1800	2000	
1/4"sq.	GNA010-02	N·m	2~10																							
3/8"sq.	GNA080-03		8~80																							
1/2"sq.	GNA200-04		40~200																							
3/4"sq.	GNA1000-06		200~1,000																							
	GNA1000-08		200~1,000																							
1"sq.	GNA2000-08		400~2,000																							

Torque wrenches are available in various sizes depending on the size of the torque value to be measured. As a guideline for selecting an equipment, we recommend an equipment whose specified tightening torque to be worked on is within 70% of the maximum measurement range of the torque wrench. For example, if the specified torque for the work to be done is 50 N·m and you choose a DIGITAL RATCHET, you should choose the GEK085-R3 with a measurement range of 17 to 85 N·m instead of the GEK060-R3 with a measurement range of 12 to 60 N·m.



■ DIGITAL RATCHET [MEMORQ] Line up

Type/Drive size		Measuring range (N·m)	Wireless Host Module Set for Win	Wireless model for Win	Wireless model for iOS	USB model for Win
			<p>This is a set of the main equipment and host module (GED-Z) of DIGITAL RATCHET [MEMORQ] Wireless Model for Win that transfers data to a Windows device. Wireless communication with a device can be done only with this set.</p> <p>This is the main equipment of DIGITAL RATCHET [MEMORQ] Wireless Model for Win, which transfers data to Windows device. A host module (GED-Z) (sold separately) is required for wireless communication with the device.</p> <p>This is a DIGITAL RATCHET [MEMORQ] wireless model that transfers data to iOS devices. Wireless communication can be done only with the main unit by installing a dedicated application on the device.</p> <p>Information recorded in the main unit is transferred to a Windows device via USB. This type is useful when a device is not available nearby, for work on the road, or for on-site installation.</p>			
1/4"sq.	DIGITAL RATCHET [MEMORQ]	6~30	TGED030R2Z	GED030-R2-Z	GED030-R2-B	GED030-R2-U
3/8"sq.	DIGITAL RATCHET [MEMORQ] small torque, compact head type	2~30	TGED030C3AZ	GED030-C3A-Z	GED030-C3A-B	GED030-C3A-U
		6~30	TGED030C3Z	GED030-C3-Z	GED030-C3-B	GED030-C3-U
	DIGITAL RATCHET [MEMORQ] compact head type	12~60	TGED060R3Z	GED060-R3-Z	GED060-R3-B	GED060-R3-U
		17~85	TGED085R3Z	GED085-R3-Z	GED085-R3-B	GED085-R3-U
1/2"sq.	DIGITAL RATCHET [MEMORQ]	17~85	TGED085R4Z	GED085-R4-Z	GED085-R4-B	GED085-R4-U
		27~135	TGED135R4Z	GED135-R4-Z	GED135-R4-B	GED135-R4-U
		40~200	TGED200R4Z	GED200-R4-Z	GED200-R4-B	GED200-R4-U
3/4"sq.	DIGITAL RATCHET [MEMORQ]	72~360	TGED360R6Z	GED360-R6-Z	GED360-R6-B	
		112~560	TGED560R6Z	GED560-R6-Z	GED560-R6-B	
DIGITAL RATCHET [MEMORQ] Adjustable wrench type		17~85	TGED085W36Z	GED085-W36-Z	GED085-W36-B	GED085-W36-U
		27~135	TGED135W36Z	GED135-W36-Z	GED135-W36-B	GED135-W36-U
		40~200	TGED200W36Z	GED200-W36-Z	GED200-W36-B	GED200-W36-U
DIGITAL RATCHET [MEMORQ] Interchangeable head		8~40	TGED040X13Z	GED040-X13-Z	GED040-X13-B	GED040-X13-U
		17~85	TGED085X13Z	GED085-X13-Z	GED085-X13-B	GED085-X13-U

Type/Drive size	Part No.	Measuring unit	Measuring range	N·m	2	4	6	8	10	25	50	75	100	125	150	175	200	225	250	275	300	400	600	800	1000				
1/4"sq.	TGED030R2Z	N·m	6~30																										
	GED030-R2-Z																												
	GED030-R2-B																												
	GED030-R2-U																												
3/8"sq.	TGED030C3AZ	N·m	2~30																										
	GED030-C3A-Z																												
	GED030-C3A-B																												
	GED030-C3A-U																												
	TGED030C3Z			N·m	6~30																								
	GED030-C3-Z																												
	GED030-C3-B																												
	GED030-C3-U																												
1/2"sq.	TGED060R3Z	N·m	12~60																										
	GED060-R3-Z																												
	GED060-R3-B																												
	GED060-R3-U																												
	TGED085R3Z			N·m	17~85																								
	GED085-R3-Z																												
1/2"sq.	TGED085R4Z	N·m	17~85																										
	GED085-R4-Z																												
	GED085-R4-B																												
	GED085-R4-U																												
3/4"sq.	TGED135R4Z	N·m	27~135																										
	GED135-R4-Z																												
	GED135-R4-B																												
	GED135-R4-U																												
3/4"sq.	TGED200R4Z	N·m	40~200																										
	GED200-R4-Z																												
3/4"sq.	TGED360R6Z	N·m	72~360																										
	GED360-R6-Z																												
3/4"sq.	TGED560R6Z	N·m	112~560																										
	GED560-R6-Z																												
Adjustable type	TGED085W36Z	N·m	17~85																										
	GED085-W36-Z																												
	GED085-W36-B																												
Adjustable type	TGED135W36Z	N·m	27~135																										
	GED135-W36-Z																												
	GED135-W36-B																												
Adjustable type	TGED200W36Z	N·m	40~200																										
	GED200-W36-Z																												
	GED200-W36-B																												
Head exchange type	TGED040X13Z	N·m	8~40																										
	GED040-X13-Z																												
Head exchange type	TGED085X13Z	N·m	17~85																										
	GED085-X13-Z																												

## FAQ

## FAQs about torque wrenches in general

## Q. Supply with calibration certificate?

A. Starting with KTC shipments on June 1, 2018, the DIGITAL RATCHET and DIGITAL RATCHET [MEMORQ] series are supplied with a calibration certificate.

## Q. Does the calibration certificate have an expiration date?

A. No, there is not. A calibration certificate certifies the accuracy at the time of calibration and does not guarantee accuracy thereafter.  
To maintain accuracy, it is recommended to calibrate it periodically.

## Q. Can I measure the loosening torque, because I want to check the tightening torque later?

A. DIGITAL RATCHET and dial type torque wrenches can measure the loosening torque. However, since the loosening torque and tightening torque are not the same value, the tightening torque cannot be same value with the loosening torque.

## Q. When the set torque is reached, will no further torque be applied?

A. General torque wrenches apply more torque than the set torque if you continue to apply force after the set torque is reached.  
If over-tightened, loosen it once and tighten it with a torque wrench again.  
\* Do not use a torque wrench for loosening work as it may cause damage.

## Q. Can I put oil on the threads?

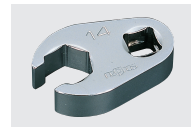
A. Lubrication changes the coefficient of friction, which changes the axial force. (A smaller coefficient of friction results in a larger axial force when the same torque is applied.) Follow the maintenance instructions, manuals, etc. to see if lubricant can be used.

## Q. Is the accuracy indication on a torque wrench FS (full scale) or RD (lead scale)?

A. All KTC torque wrenches are RD (Read Scale).  
For example, if the accuracy is  $\pm 3\%$ , there is a range of 97-103 N·m for 100 N·m and 9.7-10.3 N·m for 10 N·m.

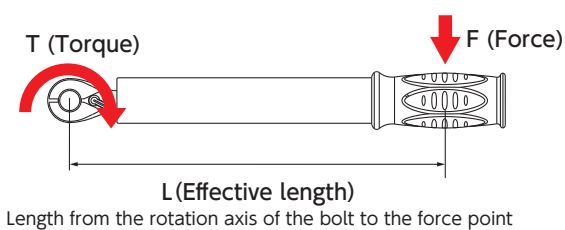
## Q. What should I note when using a crowfoot wrench?

A. Torque is determined by the distance (effective length) from the center axis of rotation to the point where force is applied (force point) and the amount of force applied.  
When a crowfoot wrench is used, the effective length changes, so the set torque does not = the actual tightening torque. Torque conversion is required to tighten to the target torque.

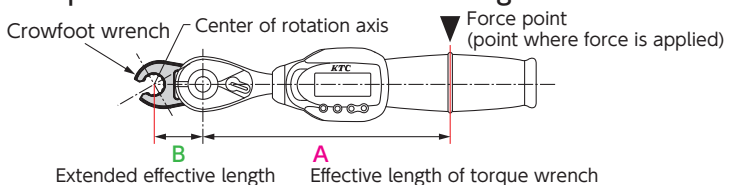


Crowfoot wrench

$$T(\text{Torque}) = F(\text{Force}) \times L(\text{Effective length})$$

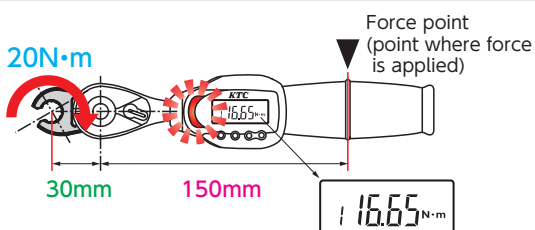


## Torque conversion formula when using a crowfoot wrench



$$\text{Torque conversion formula} : \frac{\text{Target torque value}}{\text{Converted torque value}} \times \frac{A}{(A+B)} = \text{Converted torque value}$$

(In case you want to tighten the crowfoot wrench (BNS3-10W) at 20N·m with a DIGITAL RATCHET (GEK060-R3))



$$\text{Torque conversion formula} : \frac{\text{Target torque value } 20\text{N}\cdot\text{m}}{\text{Converted torque value}^*} \times \frac{150}{150+30} = 16.666\cdots\text{N}\cdot\text{m} \approx 16.65\text{N}\cdot\text{m}$$

⇒ Tightening with a set torque of 16.65 N·m will tighten at 20 N·m.

\*The torque set on the main unit can only be set in the minimum display unit (0.05 N·m in the case of DGEK060-R3). If the torque cannot be set exactly to the converted torque value, set the value closest to the converted torque value.

\*Here is the conversion method for torque wrench with interchangeable head.



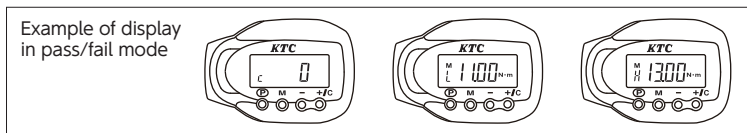
FAQs about DIGITAL RATCHET

Q. The next calibration date on the calibration certificate attached to DIGITAL RATCHET was after the purchase date?

A. The calibration date and next calibration date on the calibration certificate are for the measuring equipment that calibrated DIGITAL RATCHET, not for DIGITAL RATCHET. The date of proofreading the DIGITAL RATCHET is the date of creation in the upper right corner.

Q. The display on the DIGITAL RATCHET has changed. (showing "c" in the lower left corner / "L" or "H" in setting the torque) How can I change it back?

- A. You are in pass/fail mode. Please follow the steps below to cancel the pass/fail mode.
1. Keep power off, press and hold the "M" and "P" button together and releasing both button together.
  2. Press the "M" button three times.
  3. Press "-" (flat) button to find "OFF" on the display.
  4. Press and hold the "P" button to turn off the power. When the power is turned on again, it will switch to the normal measurement mode.



FAQs about Preset type torque wrench

Q. I cannot hear a click sound.

A. The click sound may not be heard if the set torque is too small or due to product specification. The light shock transmitted to the hand when the neck snaps should be used to determine if the set torque has been reached.

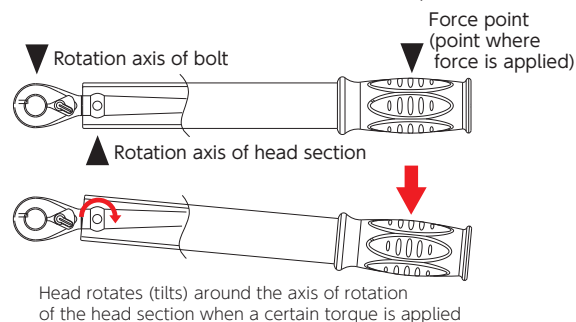
Q. The main scale lines do not match.

A. Due to individual differences in products, they may not fit perfectly. The value of the main scale is the one closest to the line of the main scale when the sub scale is set to zero.

Q. Can I change the grip position and still get a correct measurement?

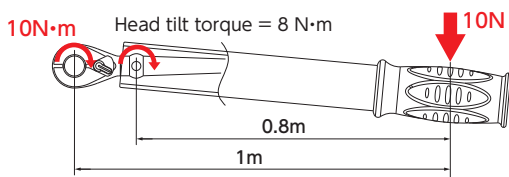
A. Changing the position of the grip will result in incorrect measurement. In the case of a pre-set or pre-locked (single function) type torque wrench, the head tilts when the set torque is reached.

The torque value when the head is tilted is the set value. If the position of the force point (the point where force is applied) is changed, the torque applied to the bolt's rotary axis will be changed when the head is tilted, resulting in incorrect measurement. (See the figure on the right.)



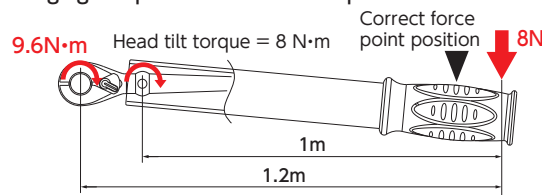
Example with a torque wrench with an effective length of 1 m set at 10 N·m

Correct force point position



When a force of 10N is applied to the correct force point position, a torque of  $10\text{N} \times 1\text{m} = 10\text{N}\cdot\text{m}$  is generated on the rotary shaft of the bolt. At this time, the torque applied to the rotating shaft of the head is  $10\text{N} \times 0.8\text{m} = 8\text{N}\cdot\text{m}$ .  
 ⇒The head is adjusted to tilt when a torque of 8 N·m is applied to the rotary axis of the head.

Changing the position of the force point



If the force point is set at the position shown in the above figure, the force required to generate the torque (8 N·m) that causes the head to tilt is  $8\text{N}\cdot\text{m} \div 1\text{m} = 8\text{N}$ . When the head tilts, the torque applied to the rotary axis of the bolt is  $8\text{N} \times 1.2\text{m} = 9.6\text{N}\cdot\text{m}$ , which does not reach the set torque (10N·m).

## MEASURING EQUIPMENT

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# DIGITAL TORQUE WRENCHES



**CAUTION**

- Read the "Instruction Manual" carefully before use.
- Do not use to loosen bolts or nuts.
- Do not use with additional pipes.
- Do not use as a hammer.
- Do not strike with a hammer or the like to apply impact.
- Insert the square drive securely.
- Tightening torque and screw tightening force depending on the condition and structure of the screw, friction coefficient, and other factors.  
Be sure to read the maintenance instructions for the product carefully and work properly.
- Use the torque wrench within the range of torque measurement.
- It is recommended to calibrate and adjust the torque wrench periodically.

# DIGITAL RATCHET

It eliminates individual differences in the degree of tightening of bolts/nuts, and realizes stable quality and improved safety. Digital Ratchet is a digital torque wrench with light operability and a digital display for severe torque measurement. It can be used in all kinds of torque management situations, from various manufacturing industries such as industrial machinery, analytical instruments, and automobiles, to construction, civil engineering, and various maintenance.

## Highly accurate torque measurement with digital display, sound and light

### Torque measurement function that meets international standards (ISO)

Measurement accuracy meets ISO standards. Customizable measurement and display modes for a wide range of situations.  
\* Excluding some products.

### Custom settings for comfortable usage of a wide functions

- Torque measurement mode switching  
Measurement mode / Preset mode / Pass, Fail mode
- Measurement display mode  
Peak hold mode / Auto clear mode / Track mode
- Buzzer sound ON/OFF switching  
Buzzer sound ON mode / Buzzer sound OFF mode

### Measurable both for left and right directions

Measurable both for right and left hand threads.



### Check torque by sound and light

At 90% of the set torque, the buzzer sounds intermittently and the LED blinks; at 100%, the buzzer changes to a continuous sound and the LED lights up.

### Equipped with torque unit conversion function for maintenance of old cars and foreign cars

N·m can be converted to kgf·m, lbf·in, and lbf·ft units.  
\*Measurement is in N·m only.

### Fixed grip with power sensor

Accurately senses and analyzes the operating load applied to the grip. More accurate torque measurement is possible regardless of work skill level.

## Rechargeable series with 12 hours of continuous use is also available.

The battery can be recharged in 2.5 hours for 12 hours of continuous use.



\*There is no driver type setting.  
\*Continuous use time varies depending on usage conditions and other factors.

### Digital Ratchet (GEK series), Digital Ratchet Type rechargeable (GEKR series)

Name of product	Digital Ratchet, Digital Ratchet Interchangeable Head Type
Measurement accuracy	Clock wise, Counter clock wise $\pm 3\%$ + 1 digit within the torque measurement range However, GEK030-R2 and GEK030-C3 GEKR030-R2 and GEKR030-C3 Clock wise, Counter clock wise $\pm 4\%$ + 1 digit within the torque measurement range GEK030-C3A GEKR030-R2A and GEKR030-C3A 2 to 2.98N·m within torque measurement range: Clock wise, Counter clock wise $\pm 12\%$ + 1 digit 3 to 5.98 N·m: Clock wise, Counter clock wise $\pm 8\%$ + 1 digit 6 to 30 N·m: Clock wise, Counter clock wise $\pm 4\%$ + 1 digit GEK040-X13 and GEK085-X13 GEKR040-X13 and GEKR085-X13 Clock wise, Counter clock wise $\pm 4\%$ + 1 digit within torque measurement range (digit = minimum display unit)
Measuring direction	Clock wise, Counter clock wise
Unit of measurement	N · m(Convertible by switching kgf · m, lbf · in, lbf · ft)
Power	GEK series: Coin-type lithium battery CR2354 x 1 Battery life: Approx. 2 months (100 times/day use) GEKR series: Rechargeable lithium polymer battery (included: charging cable) 2.5 hours of charging enables 12 hours of continuous use
Set torque number	5 presetting mode, 1 pass/fail mode
Auto-off	Automatically turns off after about 2 minutes of inactivity

Name of product	Digital Ratchet Adjustable Wrench Type
Measurement accuracy	Within torque measurement range $\pm 3\%$ + 1 digit (digit = minimum display unit) * Accuracy is guaranteed only in the lower jaw direction and for hexagonal tightening.
Measuring direction	Lower jaw direction only (Turned over for left-hand screw measurement)
Unit of measurement	N · m(Convertible by switching kgf · m, lbf · in, lbf · ft)
Power	GEK series: lithium battery CR2354 x 1 Battery life: Approx. 2 months (100 times/day use) GEKR series: Rechargeable lithium polymer battery (included: charging cable) 2.5 hours of charging enables 12 hours of continuous use
Set torque number	5 presetting mode, 1 pass/fail mode
Auto-off	Automatically turns off after about 2 minutes of inactivity

Name of product	Digital Ratchet Screwdriver Type
Measurement accuracy	Clock wise, Counter clock wise $\pm 3\%$ + 1 digit within torque measurement range (digit = minimum display unit)
Measuring direction	Clock wise, Counter clock wise
Unit of measurement	cN·m, N·m (conversion possible by switching kgf·m, ozf·in, lbf·ft)
Power	GLK series: lithium battery CR2354 x 1 Battery life: approx. 1 month (100 times/day use)
Set torque number	5 presetting mode, 1 pass/fail mode
Auto-off	If there is no operation for a certain period of time, the power will automatically turn off. The time until the power turns off can be set (1 to 10 minutes).

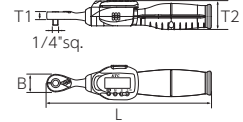
\* A commercially available lithium battery CR2354 can be used. (Non-Panasonic batteries may not be used.)  
\* Repair parts are available. Please contact your dealer for details.

1/4"sq. DIGITAL RATCHET (RECHARGEABLE)



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEKR030-R2	6~30	0.02	22	211	10	36	330	1
GEKR030-R2-L	6~30	0.02	22	211	10	36	330	1

- GEKR030-R2 comes with a dedicated plastic case (small). (Case size: W268×D107×H57).
- GEKR030-R2-L comes with a special plastic case (large). (Case size: W324×D166×H58).
- The large resin case can hold the socket holder EHB205 (sold separately) P.222 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BR2E-K P.219) is available for the ratchet head.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.

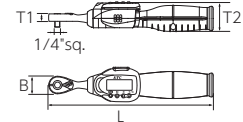


1/4"sq. DIGITAL RATCHET (RECHARGEABLE) SMALL TORQUE TYPE



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEKR030-R2A	2~30	0.02	22	211	10	36	330	1
GEKR030-R2A-L	2~30	0.02	22	211	10	36	330	1

- GEKR030-R2A comes with a dedicated plastic case (small). (Case size: W268×D107×H57).
- GEKR030-R2A-L comes with a special plastic case (large). (Case size: W324×D166×H58).
- The large resin case can hold the socket holder EHB205 (sold separately) P.222 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BR2E-K P.219) is available for the ratchet head.
- \* Preset mode and Pass/Fail mode are not available in the range of 2 to 2.98 N·m. (Measurement only)
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.

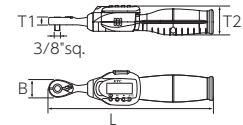


3/8"sq. DIGITAL RATCHET (RECHARGEABLE) COMPACT HEAD TYPE



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEKR030-C3	6~30	0.02	22	211	10	36	330	1
GEKR030-C3-L	6~30	0.02	22	211	10	36	330	1

- GEKR030-C3 comes with a dedicated plastic case (small). (Case size: W268×D107×H57).
- GEKR030-C3-L comes with a dedicated plastic case (large). (Case size: W324×D166×H58).
- The large resin case can hold the socket holder EHB305 (sold separately) P.241 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BRC3-K P.235) is available for the ratchet head.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.

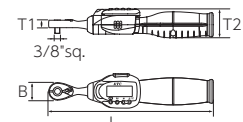


3/8"sq. DIGITAL RATCHET (RECHARGEABLE) SMALL TORQUE, COMPACT HEAD TYPE



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEKR030-C3A	2~30	0.02	22	211	10	36	330	1
GEKR030-C3A-L	2~30	0.02	22	211	10	36	330	1

- GEKR030-C3A comes with a dedicated plastic case (small). (Case size: W268×D107×H57).
- GEKR030-C3A-L comes with a dedicated plastic case (large). (Case size: W324×D166×H58).
- The large resin case can hold the socket holder EHB305 (sold separately) P.241 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BRC3-K P.235) is available for the ratchet head.
- \* Preset mode and Pass/Fail mode are not available in the range of 2 to 2.98 N·m. (Measurement only)
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.



• Measurement instruments should be calibrated once a year. For details, P.025.  
 • Do not disassemble or modify the product.

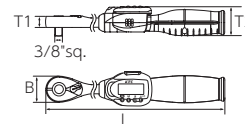


### 3/8"sq. DIGITAL RATCHET (RECHARGEABLE)



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEKR060-R3	12~60	0.05	33	217	13.5	36	400	1
GEKR060-R3-L	12~60	0.05	33	217	13.5	36	400	1

- GEKR060-R3 comes with a dedicated plastic case (small). (Case size: W268×D107×H57).
- GEKR060-R3-L comes with a dedicated plastic case (large). (Case size: W324×D166×H58).
- The large resin case can hold the socket holder EHB305 (sold separately) P.241 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BR3E-K P.235) is available for the ratchet head.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.

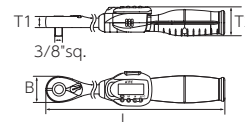


### 3/8"sq. DIGITAL RATCHET (RECHARGEABLE)



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEKR085-R3	17~85	0.1	33	271	13.5	36	440	1
GEKR085-R3-L	17~85	0.1	33	271	13.5	36	440	1

- GEKR085-R3 comes with a dedicated plastic case (small). (Case size: W322×D107×H57).
- GEKR085-R3-L comes with a special plastic case (large). (Case size: W324×D166×H58).
- The large resin case can hold the socket holder EHB305 (sold separately) P.241 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BR3E-K P.235) is available for the ratchet head.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.

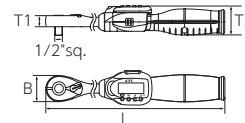


### 1/2"sq. DIGITAL RATCHET (RECHARGEABLE)



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEKR085-R4	17~85	0.1	39.5	274	18	36	590	1
GEKR085-R4-L	17~85	0.1	39.5	274	18	36	590	1

- GEKR085-R4 comes with a dedicated plastic case (small). (Case size: W322×D107×H57).
- GEKR085-R4-L comes with a special plastic case (large). (Case size: W324×D166×H58).
- The large resin case can hold the socket holder EHB305 (sold separately) P.255 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BR4E-K P.251) is available for the ratchet head.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.

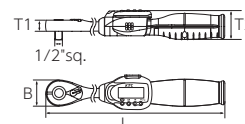


### 1/2"sq. DIGITAL RATCHET (RECHARGEABLE)



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEKR135-R4	27~135	0.1	39.5	380	18	36	700	1

- Includes a special plastic case. (Case size: W428×D107×H57).
- A repair kit (BR4E-K P.251) is available for the ratchet head.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.



• Function mark is indicated under the product name. For the details, please refer to P.004-005.  
 • Products marked with ⚡ should be ordered after checking stock.



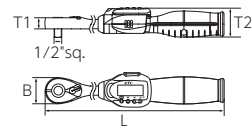


### 1/2"sq. DIGITAL RATCHET (RECHARGEABLE)



No.	Torque measurement range (N·m)	Minimum display unit (N·m)	B	L	T1	T2	Weight (g)	☑
GEKR200-R4	40~200	0.2	39.5	580	18	36	990	1

- Includes a special plastic case. (Case size: W628×D107×H57).
- A repair kit (BR4E-K ➔ P.251) is available for the ratchet head.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. ➔ Refer to "Repairable List" from P.625.
- \* Charger is not included. Please prepare a USB charger.



### DIGITAL RATCHET (RECHARGEABLE) ADJUSTABLE WRENCH TYPE



GEKR085-W36



GEKR135-W36



GEKR200-W36



Suitable for work on piping where a socket wrench cannot be used.



GEKR085-W36



GEKR135-W36



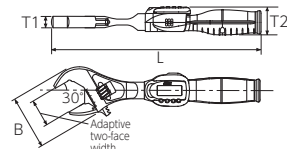
GEKR200-W36


No.	Torque measurement range (N·m)	Minimum display unit (N·m)	Adaptive two-face width (mm)	B	L	T1	T2	Weight (g)	☑
GEKR085-W36	17~ 85	0.1	10~36	69	275.2	14.5	36	560	1
GEKR135-W36	27~135	0.1	10~36	69	381.2	14.5	36	680	1
GEKR200-W36	40~200	0.2	10~36	69	581.2	14.5	36	990	1

\* Accuracy is guaranteed only in the direction of the lower jaw and only for hexagonal tightening objects.

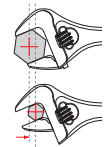
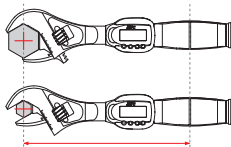
• Includes a special plastic case.  
(GEKR085-W36 Case size:W322×D107×H57)  
(GEKR135-W36 Case size:W428×D107×H57)  
(GEKR200-W36 Case size:W628×D107×H57)

- \* Charger is not included. Please prepare a USB charger.
- \* Repair parts are set. ➔ Refer to "Repairable List" from P.625.





**Adjustable wrench head**  
Highly accurate measurements are possible by using a dedicated head that does not change the effective length even if the opening size changes.

 <p><b>Normal Adjustable wrench</b></p> <p>The center position of the bolt changes.</p>	 <p><b>Digital ratchet adjustable wrench type</b></p> <p>Effective length</p> <p>The effective length (distance from the center of the bolt to the point of force) does not change even if the bolt size changes.</p> <p>*A change in the effective length will cause an error in the measured value.</p>
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### DIGITAL RATCHET (RECHARGEABLE) INTERCHANGEABLE HEAD TYPE



GEKR040-X13

GEKR085-X13



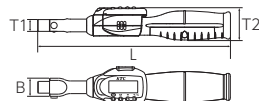
GEKR040-X13



GEKR085-X13

No.	Torque measurement range (N·m)	Minimum display unit (N·m)	B	L	T1	T2	Weight (g)	☑
GEKR040-X13	8~40	0.05	20	213	13	36	340	1
GEKR085-X13	17~85	0.1	20	213	13	36	340	1

- The head replacement type of the "Digital ratchet Type rechargeable", an evolutionary digital torque tool.
- The interchangeable head further expands the range of applications and can be used in combination with various interchangeable heads.
- Includes a special plastic case. (Case size: W324×D166×H58).
- The dedicated resin case can hold the socket holder EHB205 ➔ P.222, EHB305 ➔ P.241, EHB405 ➔ P.255 (sold separately) with the socket attached. (Sockets, bit sockets, etc. exceeding 70 mm in length and 32 mm in outside diameter cannot be accommodated.)
- \* Charger is not included. Please prepare a USB charger.
- \* Repair parts are set. ➔ Refer to "Repairable List" from P.625.



Example of combination with ratchet head  
(Interchangeable heads are listed in ➔ P.418-420)



Click here for head application chart

• Measurement instruments should be calibrated once a year. For details, ➔ P.025.  
• Do not disassemble or modify the product.

## DIGITAL RATCHET (RECHARGEABLE) INTERCHANGEABLE OPEN END HEAD SET

9  
12

Repairable



TGEKR040S09



CAUTION

- There are two types of effective lengths for spanner interchangeable heads, so use interchangeable head adapters that correspond to each effective length.

No.	Torque measurement range (N·m)	Weight(g)	☐	
⑦ TGEKR040S09	8~40	890	1	

## Set contents

Digital ratchet Type rechargeable	GEKR040-X13
Interchangeable head adapter	GX13-A0917, GX13-A0920
Open-end wrench head	GX0912-S08, S10, S12, S13, S14, S17

No.	Torque measurement range (N·m)	Weight(g)	☐	
⑦ TGEKR085S09	17~85	890	1	

## Set contents

Digital ratchet Type rechargeable	GEKR085-X13
Interchangeable head adapter	GX13-A0917, GX13-A0920
Open-end wrench head	GX0912-S08, S10, S12, S13, S14, S17

- Usage
- General assembly work and inspection/measurement.
- Feature
- Open-end wrench head are available in six frequently used types.
  - Includes a dedicated tray (W447×D185×H30). Easy to control the fixed position and improve work efficiency.
  - The dedicated tray has a free space. Additional replacement heads can also be stored.
  - Single door metal case EKB-2 (sold separately) ⑦ Can be stored in P.198.
- Accessories: Charger is not included. Please prepare a USB charger.

## DIGITAL RATCHET (RECHARGEABLE) INTERCHANGEABLE BOX END HEAD SET

9  
12

Repairable



TGEKR040M08

No.	Torque measurement range (N·m)	Weight(g)	☐	
⑦ TGEKR040M08	8~40	790	1	

## Set contents

Digital ratchet Type rechargeable	GEKR040-X13
Interchangeable head adapter	GX13-A0917
Box-end wrench head	GX0912-M08, M10, M12, M13, M14, M17

No.	Torque measurement range (N·m)	Weight(g)	☐	
⑦ TGEKR085M08	17~85	790	1	

## Set contents

Digital ratchet Type rechargeable	GEKR085-X13
Interchangeable head adapter	GX13-A0917
Box-end wrench head	GX0912-M08, M10, M12, M13, M14, M17

- Usage
- General assembly work and inspection/measurement.
- Feature
- Box-end wrench head are available in six frequently used types.
  - Includes a dedicated tray (W447×D185×H30). Easy to control the fixed position and improve work efficiency.
  - The dedicated tray has a free space. Additional replacement heads can also be stored.
  - Single door metal case EKB-2 (sold separately) ⑦ Can be stored in P.198.
- Accessories: Charger is not included. Please prepare a USB charger.

## DIGITAL RATCHET (RECHARGEABLE) INTERCHANGEABLE CROWFOOT HEAD SET

9  
12

Repairable



TGEKR040NS07

No.	Torque measurement range (N·m)	Weight(g)	☐	
⑦ TGEKR040NS07	8~40	790	1	

## Set contents

Digital ratchet Type rechargeable	GEKR040-X13
Interchangeable head adapter	GX13-A0917
Crowfoot wrench head	GX0912-NS10, NS12, NS14, NS17, NS19

No.	Torque measurement range (N·m)	Weight(g)	☐	
⑦ TGEKR085NS07	17~85	790	1	

## Set contents

Digital ratchet Type rechargeable	GEKR085-X13
Interchangeable head adapter	GX13-A0917
Crowfoot wrench head	GX0912-NS10, NS12, NS14, NS17, NS19

- Usage
- General assembly work and inspection/measurement.
- Feature
- Crowfoot wrench head are available in five frequently used types.
  - Includes a dedicated tray (W447×D185×H30). Easy to control the fixed position and improve work efficiency.
  - The dedicated tray has a free space. Additional replacement heads can also be stored.
  - Single door metal case EKB-2 (sold separately) ⑦ Can be stored in P.198.
- Accessories: Charger is not included. Please prepare a USB charger.

- Function mark is indicated under the product name. For the details, please refer to ⑦ P.004-005.
- Products marked with ⑦ should be ordered after checking stock.



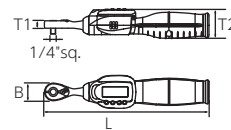
**KTC****1/4"sq. DIGITAL RATCHET**

GEK030-R2

GEK030-R2-L

No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK030-R2	6~30	0.02	22	211	10	36	330	1
GEK030-R2-L	6~30	0.02	22	211	10	36	330	1

- GEK030-R2 comes with a dedicated plastic case (small). (Case size: W268×D107×H57).
- GEK030-R2-L comes with a special plastic case (large). (Case size: W324×D166×H58).
- The large plastic case can hold the socket holder EHB205 (sold separately) P.222 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).



- A repair kit (BR2E-K P.235) is available for the ratchet head.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.

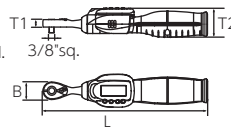
**3/8"sq. DIGITAL RATCHET  
COMPACT HEAD TYPE**

GEK030-C3

GEK030-C3-L

No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK030-C3	6~30	0.02	22	211	10	36	330	1
GEK030-C3-L	6~30	0.02	22	211	10	36	330	1

- GEK030-C3 comes with a dedicated plastic case (small). (Case size: W268×D107×H57).
- GEK030-C3-L comes with a dedicated plastic case (large). (Case size: W324×D166×H58).
- The large plastic case can hold the socket holder EHB305 (sold separately) P.241 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BRC3-K P.235) is available for the ratchet head.



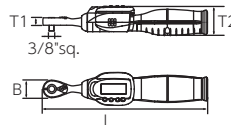
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.

**3/8"sq. DIGITAL RATCHET SMALL TORQUE,  
COMPACT HEAD TYPE**

GEK030-C3A

No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK030-C3A	2~30	0.02	22	211	10	36	330	1

- Includes a special plastic case (small). (Case size: W268×D107×H57).
- A repair kit (BRC3-K P.235) is available for the ratchet head.
- \* Preset mode and Pass/Fail mode are not available in the range of 2 to 2.98 N·m. (Measurement only)
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.

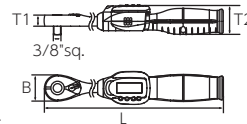
**3/8"sq. DIGITAL RATCHET**

GEK060-R3

GEK060-R3-L

No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK060-R3	12~60	0.05	33	217	13.5	36	400	1
GEK060-R3-L	12~60	0.05	33	217	13.5	36	400	1

- GEK060-R3 comes with a dedicated plastic case (small). (Case size: W268×D107×H57).
- GEK060-R3-L comes with a dedicated plastic case (large). (Case size: W324×D166×H58).
- The large plastic case can hold the socket holder EHB305 (sold separately) P.241 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BR3E-K P.235) is available for the ratchet head.



- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.

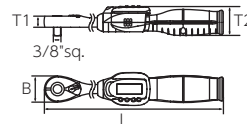
**3/8"sq. DIGITAL RATCHET**

GEK085-R3

GEK085-R3-L

No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK085-R3	17~85	0.1	33	271	13.5	36	440	1
GEK085-R3-L	17~85	0.1	33	271	13.5	36	440	1

- GEK085-R3 comes with a dedicated plastic case (small). (Case size: W322×D107×H57).
- GEK085-R3-L comes with a special plastic case (large). (Case size: W324×D166×H58).
- The large plastic case can hold the socket holder EHB305 (sold separately) P.241 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).
- A repair kit (BR3E-K P.235) is available for the ratchet head.



- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. Refer to "Repairable List" from P.625.

- Measurement instruments should be calibrated once a year. For details, P.025.
- Do not disassemble or modify the product.

### 1/2"sq. DIGITAL RATCHET



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK085-R4	17~85	0.1	39.5	274	18	36	590	1
GEK085-R4-L	17~85	0.1	39.5	274	18	36	590	1

• GEK085-R4 comes with a dedicated plastic case (small). (Case size: W322×D107×H57).  
 • GEK085-R4-L comes with a special plastic case (large). (Case size: W324×D166×H58).  
 • The large resin case can hold the socket holder EHB405 (sold separately) P.255 with the socket attached. (Sockets exceeding 70mm in length and 32mm in outer diameter, bit sockets, etc. cannot be stored).  
 • A repair kit (BR4E-K P.251) is available for the ratchet head.  
 \* It is recommended that the repair kit be calibrated and adjusted if used.  
 \* Repair parts are set. Refer to "Repairable List" from P.625.

### 1/2"sq. DIGITAL RATCHET



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK135-R4	27~135	0.1	39.5	380	18	36	700	1

• Includes a special plastic case. (Case size: W428×D107×H57).  
 • A repair kit (BR4E-K P.251) is available for the ratchet head.  
 \* It is recommended that the repair kit be calibrated and adjusted if used.  
 \* Repair parts are set. Refer to "Repairable List" from P.625.

### 1/2"sq. DIGITAL RATCHET



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK200-R4	40~200	0.2	39.5	580	18	36	990	1

• Includes a special plastic case. (Case size: W628×D107×H57).  
 • A repair kit (BR4E-K P.251) is available for the ratchet head.  
 \* It is recommended that the repair kit be calibrated and adjusted if used.  
 \* Repair parts are set. Refer to "Repairable List" from P.625.

### DIGITAL RATCHET ADJUSTABLE WRENCH TYPE



No.	Torque measurement range (N·m)	Minimum display unit (N·m)	Applicable width across flats (mm)	B	L	T1	T2	Weight (g)	☐
GEK085-W36	17~ 85	0.1	10~36	69	275.2	14.5	36	560	1
GEK135-W36	27~135	0.1	10~36	69	381.2	14.5	36	680	1
GEK200-W36	40~200	0.2	10~36	69	581.2	14.5	36	990	1

\* Accuracy is guaranteed only in the direction of the lower jaw and only for hexagonal tightening objects.  
 • Includes a special plastic case.  
 (GEK085-W36 Case size:W322×D107×H57)  
 (GEK135-W36 Case size:W428×D107×H57)  
 (GEK200-W36 Case size:W628×D107×H57)



Suitable for work on piping where a socket wrench cannot be used.

**Adjustable wrench head**  
Highly accurate measurements are possible by using a dedicated head that does not change the effective length even if the opening size changes.

**Normal Adjustable wrench** vs **Digital ratchet adjustable wrench type**

The center position of the bolt changes. vs The effective length (distance from the center of the bolt to the point of force) does not change even if the bolt size changes.

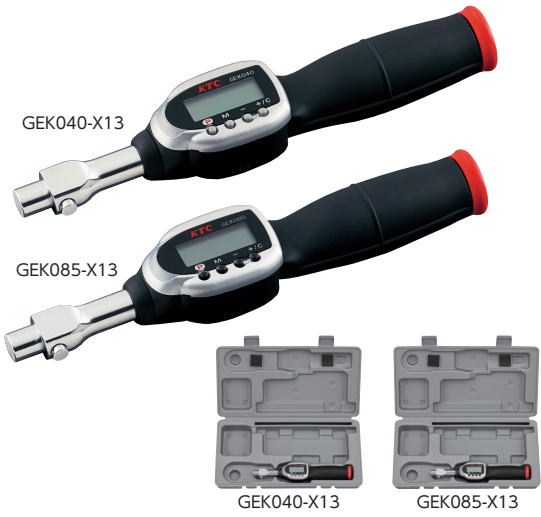
\*A change in the effective length will cause an error in the measured value.

• Function mark is indicated under the product name. For the details, please refer to P.004-005.  
 • Products marked with ⚙ should be ordered after checking stock.



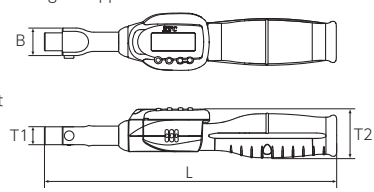


## DIGITAL RATCHET INTERCHANGEABLE HEAD TYPE



No.	Torque measurement range(N·m)	Minimum display unit(N·m)	B	L	T1	T2	Weight (g)	☐
GEK040-X13	8~40	0.05	20	213	13	36	340	1
GEK085-X13	17~85	0.1	20	213	13	36	340	1

- The head replacement type of Digital ratchet.
- The interchangeable head further expands the range of applications and can be used in combination with various interchangeable heads.
- Includes a special plastic case. (Case size: W324×D166×H58).
- The special plastic case can hold the socket holder EHB205 → P.222, EHB305 → P.241, EHB405 → P.255 (sold separately) with the socket attached. 405 → P.255 can be stored with sockets attached. (Sockets, bit sockets, etc. exceeding 70 mm in length and 32 mm in outside diameter cannot be accommodated.)



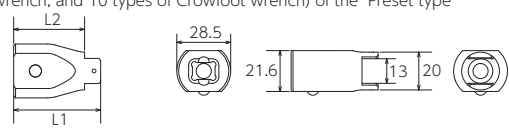
Example of combination with ratchet head

## INTERCHANGEABLE HEAD ADAPTER



No.	Drive size	L1	L2	Corresponding effective length	Weight (g)	☐
GX13-A0917	9×12	46	37.5	17.5	114	1
GX13-A0920	9×12	43.5	35	20	110	1

- Adapter for attaching a 9x12 insert angle replacement head to Digital ratchet and Digital ratchet [MEMORQ] interchangeable heads.
- 26 types of interchangeable heads (8 types of open end wrenches with 9×12 drive size, 8 types of Box-end wrench, and 10 types of Crowfoot wrench) of the "Preset type torque wrench head interchangeable type series" can be used without torque conversion.



- Use a replacement head that corresponds to the effective length of the Interchangeable head adapter. Torque conversion is required for different effective lengths.
- GX13-A0920 is an adapter for Interchangeable head adapter (GX0912-S14,16,17).

## Check here for details on compatible replacement heads

9×12 Open-end wrench head



→ P.429



9×12 box-end wrench head for torque wrench



→ P.429



9×12 Crowfoot wrench head



→ P.430



Check here for the application chart of the replacement head

## RATCHET HEAD



GX13-R2



GX13-C3



GX13-R3



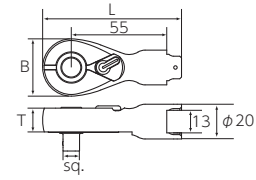
GX13-C4

No.	sq.	Allowable torque (N·m)	B	L	T	Weight (g)	☐
GX13-R2	1/4"	30	23	74.5	10	100	1
GX13-C3	3/8"	30	23	74.5	10	100	1
GX13-R3	3/8"	85	33	80	13.7	160	1
GX13-C4	1/2"	85	33	80	13.7	160	1

- Replacement head for Digital ratchet head replacement system.
- Repair kits (BR2E-K for GX13-R2 → P.219, BRC3-K for GX13-C3 → P.235, GX BR3E-K for GX13-R3 → P.235, BRC4-K for GX13-C4 → P.426).
- Standard small ratchet head.
- Installation to the digital ratchet can be done in two directions: front and back. Comfortable operability with union mechanism, integrated claw, and 36 gears.
- \* Repair parts are set. → Refer to "Repairable List" from P.625.



Combined state



• Measurement instruments should be calibrated once a year. For details, → P.025.  
 • Do not disassemble or modify the product.

### 3/8"sq. DIGITAL RATCHET INTERCHANGEABLE HEAD TYPE RATCHET HEAD SET

3/8" sq.

36

PUSH

Repair Spare parts

Repairable



TGEK040X132

No.	Torque measurement range (N·m)	Weight(g)	☐	
⑦ TGEK040X132	8~40	500	1	

Set contents

Digital ratchet interchangeable head	GEK040-X13
Ratchet head	GX13-R3

No.	Torque measurement range (N·m)	Weight(g)	☐	
⑦ TGEK085X132	17~85	500	1	

Set contents

Digital ratchet interchangeable head	GEK085-X13
Ratchet head	GX13-R3

- Digital ratchet head interchangeable and ratchet head set.
- Includes a special plastic case. (Case size: W324×D166×H58).
- The special plastic case can hold the socket holder EHB305 (sold separately) ⑦ P.241 with the socket attached. (Sockets exceeding 70 mm in length and 32 mm in outer diameter and bit sockets cannot be stored.)



Check here for head application chart



Head can be flipped over for use

### RATCHET BOX END WRENCH HEAD SET

72

12pt.

POWERFIT



No.	Weight(g)	☐	
⑦ TGX13MR147	201	1	

Set contents

Ratchet box end wrench head	GX13-MR14
Sockets for Ratchet box end wrench head	BZ14-08W, 10W, 12W, 13W, 14W
3/8"sq. drive angle adaptor for Ratchet box end wrench head	BZ14-BA3

- Interchangeable head for Digital ratchet head replacement system.
- The direction of rotation can be switched by operating the lever on the side of the head, so it can be used for tightening and loosening.
- The number of teeth is 72 and the feed angle is 5°, enabling fine feed operation.



Combined state



Thin head can be used in tight spaces that were difficult to work in with conventional Digital ratchet.

### RATCHET BOX END WRENCH HEAD

72

12pt.

POWERFIT

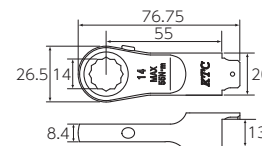


No.	Allowable torque (N·m)	Size (mm)	Weight(g)	☐	
⑦ GX13-MR14	55	14	90	1	

- Interchangeable head for Digital ratchet head replacement system.



Combined state



Sockets for ratchet Box-end wrench (single item) and 3/8"sq. drive angle adapters are listed in the Conventional Tools section.



Sockets for Ratchet Box-end wrench  
⑦ P.336



3/8"sq. drive angle adaptor for ratchet box-end wrench  
⑦ P.336

• Function mark is indicated under the product name. For the details, please refer to ⑦ P.004-005.  
• Products marked with ⑦ should be ordered after checking stock.



HEX. HEAD

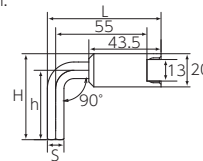


No.	Allowable torque (N·m)	S	L	H	h	Weight(g)	⊖
GX13-H04	11	4	65.5	37	27	78	1
GX13-H05	19	5	66	40.5	30.5	81	1
GX13-H06	46	6	66.5	45	35	85	1
GX13-H08	85	8	67.5	50	40	96	1
GX13-H10	85	10	68.5	55	45	110	1

• Interchangeable head for Digital ratchet head replacement system.



Combined state



HEX. HEAD (SHORT TYPE)



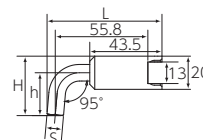
No.	Allowable torque (N·m)	S	L	H	h	Weight(g)	⊖
GX13-H04S	11	4	66.3	24.5	14.5	77	1
GX13-H05S	19	5	66.8	26.5	16.5	79	1
GX13-H06S	46	6	67.3	29	19	81	1
GX13-H08S	85	8	68.2	32	22	88	1
GX13-H10S	85	10	69.2	35	25	99	1

• Interchangeable head for Digital ratchet head replacement system.

• The bend angle at the tip part is set at 95° to provide space for fingers.



Combined state



BRAKE TOOL (STRAIGHT TYPE)



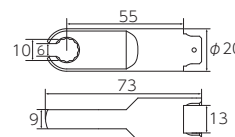
No.	Allowable torque (N·m)	Size (mm)	Weight(g)	⊖
GX13-MZ10	25	10	80	1

• Interchangeable head for Digital ratchet head replacement system.

• Ideal for torque management during installation and removal of automotive brake pipes and ABS actuators.



Combined state



BRAKE TOOL SET (OFFSET TYPE)



GX13-E100

GX13-EMZ10

No.	Weight(g)	⊖
TGX13E1002	250	1

Set contents

Brake Tool Extension Tool	GX13-E100
Brake tool 10mm offset type	GX13-EMZ10

• Interchangeable head for Digital ratchet head replacement system.

• Ideal for torque management during installation and removal of automotive brake pipes and ABS actuators.

\* The joint between the extension tool and the wrench is specially designed. It cannot be used in combination with other socket wrenches or accessories.

Brake Tool Extension Tool

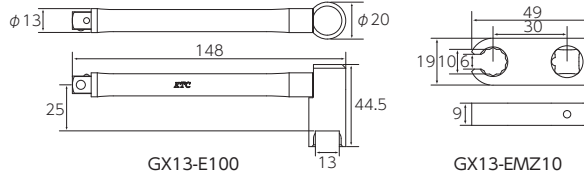
No.	Allowable torque (N·m)	Weight(g)	⊖
GX13-E100	25	180	1

Brake tool 10mm offset type

No.	Allowable torque (N·m)	Size (mm)	Weight(g)	⊖
GX13-EMZ10	25	10	70	1



Combined image



GX13-E100

GX13-EMZ10

• Measurement instruments should be calibrated once a year. For details, P.025.  
• Do not disassemble or modify the product.



PROTECTION COVER



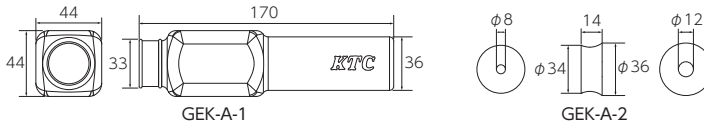
Fitting image



Fitting image

No.	Weight(g)	☐	
⚙️ GEK-A	30	1	

- This is a cover to protect the Digital ratchet (GEK/GEKR series).
- The waterproof function is equivalent to IPX4, protecting the unit from water and dirt during sudden rain during outdoor work or when installing around water supply and sewerage lines. (Only the part equipped with the protective cover. It is not completely waterproof.)
- When installed, the visibility of the unit is not impaired and button operation is possible.
- The cover is made of elastic silicone and can be removed and reattached repeatedly.
- \* Not applicable to GWE series (old model), GLK series (driver type), and GED series (MEMORQ).
- \* If water gets into any area other than the area where the protective cover is attached, wipe off the moisture thoroughly.



Applicable products

Digital ratchet ratchet type	GEK030-R2,GEK030-R2-L,GEK030-C3A,GEK030-C3,GEK030-C3-L,GEK060-R3,GEK060-R3-L,GEK085-R3,GEK085-R3-L,GEK085-R4,GEK085-R4-L,GEK135-R4,GEK200-R4,GEKR030-R2A,GEKR030-R2A-L,GEKR030-R2,GEKR030-R2-L,GEKR030-C3A,GEKR030-C3A-L,GEKR030-C3,GEKR030-C3-L,GEKR060-R3,GEKR060-R3-L,GEKR085-R3,GEKR085-R3-L,GEKR085-R4,GEKR085-R4-L,GEKR135-R4,GEKR200-R4
Digital ratchet adjustable wrench type	GEK085-W36,GEK135-W36,GEK200-W36,GEKR085-W36,GEKR135-W36,GEKR200-W36
Digital ratchet interchangeable head type	GEK040-X13,GEK085-X13,GEKR040-X13,GEKR085-X13

Spare parts

No.	Description	Weight(g)	☐	
⚙️ GEK-A-1	Cover	20	1	
⚙️ GEK-A-2	Rubber Parts	10	1	



Safe to work around water.



Made of highly elastic silicone, it can be repeatedly attached and detached.



You can work with dirty hands without worrying.



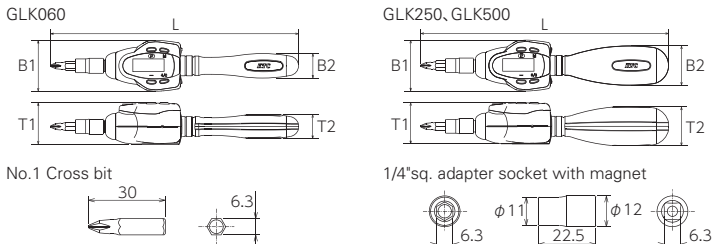
- The protective cover is not for insulation.
- Do not work submerged in liquid.
- Do not put on and take off the product when there is moisture around it.
- Do not claw when attaching or detaching to prevent damage.
- Do not pull more than necessary.
- Be careful not to slip on the surface when it is soiled with dirt.

DIGITAL RATCHET SCREWDRIVER TYPE



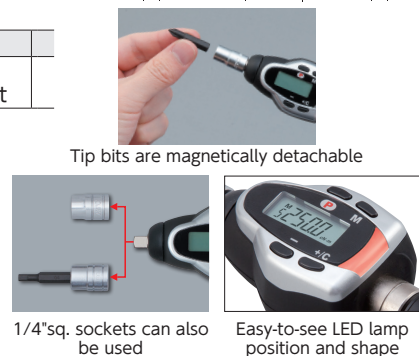
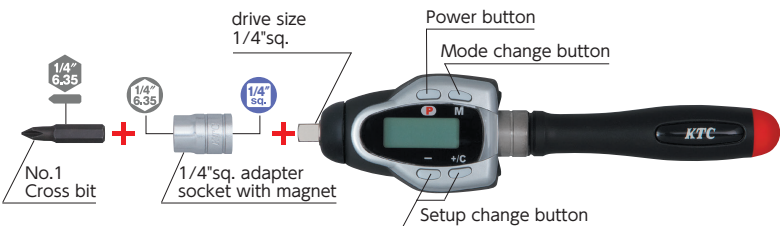
No.	Torque measurement range	Minimum display unit	B1	B2	L	T1	T2	Weight (g)	⚡
GLK060	12~60cN·m (0.12~0.6N·m)	0.05cN·m (0.01N·m)	41	20	199.3	33	19	170	1
GLK250	50~250cN·m (0.5~2.5N·m)	0.1cN·m (0.01N·m)	41	32	199.3	33	31	190	1
GLK500	100~500cN·m (1.0~5.0N·m)	0.1cN·m (0.01N·m)	41	32	199.3	33	31	190	1

- \* The unit of measurement can be set in both cN·m and N·m. (100cN·m = 1N·m).
- The "Digital ratchet" driver type for extremely small torque.
- It can be used in a wide range of situations where extremely small torque management is required, such as replacing electrical equipment, electrical boards, cutting tool tips, and attaching resin and aluminum parts.
- Bits is detachable by magnet, allowing the use of bit with 6.3mm axis opposing side such as insert interchangeable flat ratchet screwdriver (P.361) by removing the attached No.1 cross bit. (Double-headed bit cannot be used)
- Sockets with an drive size of 1/4"sq. or bit sockets can also be used by removing the adapter socket.
- No.1 cross bit, 1/4"sq. adapter socket with magnet, and plastic case for convenient storage.
- Capable of measurement in both left and right directions. Measurement accuracy of ±3% meets ISO standards.
- \* Because of the high standby power, the use of the attached insulation sheet is recommended when not in use.



Spare parts

No.	Description
GLK-B2	1/4"sq. adapter socket with magnet



1/4"sq. RATCHET ADAPTER

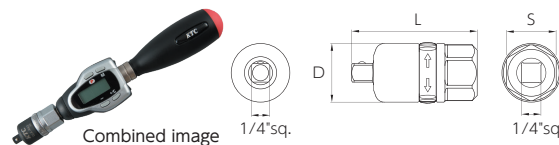


GLK060  
GLK250  
GLK500  
専用



No.	D	L	S	Weight(g)
GLK-RA2	20	43	17	60

- Optional parts for Digital ratchet driver type.
- When attached to a Digital ratchet driver type, ratchet operation is possible, which is useful for quick turning.
- The switch can be turned to the right or left by operating the switch.
- Sockets and bit sockets with a 1/4"sq. drive size can be used.



Advanced digital torque tool  
DIGITAL RATCHET [MEMORQ]  
デジタルチェ. [メモルク].



Send measurement records to your computer!

Work history is managed to ensure reliable torque management.

Digital ratchet [MEMORQ] is listed in the Solution section.

☎ P.037-050

The introduction of the torque management system of the Digital ratchet [MEMORQ] series will greatly improve such operations as "torque management is performed but no record is kept" and "inputting torque data into a PC after writing it down by hand". This will realize "improved efficiency" and "improved data reliability."

• Measurement instruments should be calibrated once a year. For details, ☎ P.025.  
• Do not disassemble or modify the product.

## MEASURING EQUIPMENT

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# TORQUE WRENCHES

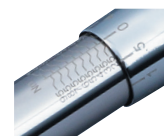


**CAUTION**

- Read the "Instruction Manual" carefully before use.
- Do not use to loosen bolts or nuts.
- Do not use with additional pipes.
- Do not use as a hammer.
- Do not strike with a hammer to apply impact.
- Insert the square drive securely.
- Tightening torque and screw tightening force depends on the condition and structure of the screw, coefficient of friction, etc.
- Read the maintenance instructions for the product carefully to ensure correct operation.
- Use the torque wrench within its torque measurement range.
- It is recommended to calibrate and adjust the torque wrench periodically.

## Torque wrench pre-set type

- The torque value to be measured can be set in advance, which is effective when working continuously or in places where it is difficult to read the scale.
- When the set torque is reached, a "click" sound is heard and a light shock is felt in the hand to confirm that tightening is complete.
  - \* Sound may not be heard at small torques.
- Measurement accuracy of  $\pm 3\%$  meets ISO standards. Measurement direction is clockwise only. (CMPC0152 to CMPC3004)
- The rubber ring around the head improves sealing and prevents foreign objects from entering, thus maintaining high accuracy.
- Comes with a sturdy plastic case for convenient storage.



Torque setting scale and lock ring



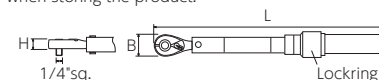
Comes with a plastic case for convenient storage (CMPC1004 in photo)

### 1/4"sq. TORQUE WRENCH PRE-SET TYPE

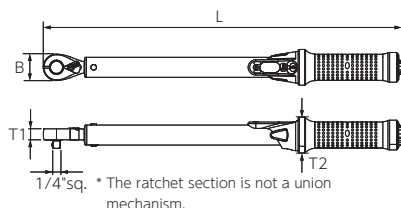


No.	Torque measurement range (N·m)	Min. scale	L	B	H	Weight (kg)	□	
CMPC0152	3~15	0.1	252	22	10	0.4	1	

- Measuring direction is right (clockwise), measurement accuracy  $\pm 3$
- Comes with a plastic case for convenient storage.
- A repair kit (BR2E-K  $\rightarrow$  P.219) is available for the ratchet head.
- \* Measurement scale is N·m scale only.  
(Simple conversion formula:  $1\text{kgf}\cdot\text{m} \approx 10\text{N}\cdot\text{m}$   $1\text{N}\cdot\text{m} \approx 0.1\text{kgf}\cdot\text{m}$ )
- \* Repair parts are set.  $\rightarrow$  Refer to "Repairable List" from P.625.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Please set the torque to the lowest value when storing the product.



### 1/4"sq. TORQUE WRENCH PRE-SET TYPE



No.	Torque measurement range (N·m)	Min. scale	L	B	T1	T2	Weight (kg)	□	
GW010-02	2~10	0.1	317.4	22	10	37.5	0.5	1	
GW025-02	5~25	0.1	317.4	22	10	37.5	0.5	1	

- Measuring direction is right (clockwise), measurement accuracy  $\pm 3$
- Highly visible scale for more comfortable torque adjustment work.
- Comes with a special plastic case for convenient storage.
- The grip is made of elastomer resin that resists deterioration and provides a good fit.
- A lock mechanism is employed to prevent unintentional change of the torque setting value.
- A repair kit (GW-02A-K  $\rightarrow$  P.424) is available for the ratchet head.
- \* Repair parts are set.  $\rightarrow$  Refer to "Repairable List" from P.625.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Please set the torque to the lowest value when storing the product.

### REPAIR KIT FOR 1/4"sq. RATCHET HEAD



No.	Contents	Weight(g)	
GW-02A-K	1 each of drive gear, claw, steel ball, spring, lever, small screw, lid, and small screw $\times 2$	25	

- Repair kit for 1/4 "sq. torque wrench pre-set type (GW010-02,GW025-02  $\rightarrow$  P.424) and 1/4 "sq. torque wrench pre-lock type (GW010-02T,GW025-02T  $\rightarrow$  P.431).

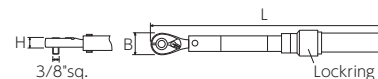
### 3/8"sq. TORQUE WRENCH PRE-SET TYPE

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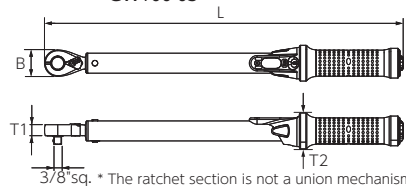
No.	Torque measurement range (N·m)	Min. scale	L	B	H	Weight(kg)	□	
CMPC0253	5~ 25	0.1	282	22	10	0.4	1	
CMPC0503	10~ 50	0.5	335	33	13.7	1	1	
CMPC1003	20~100	0.5	400	33	13.7	1.2	1	

- Measuring direction is right (clockwise), measurement accuracy  $\pm 3$
- Comes with a plastic case for convenient storage.
- A repair kit (BR3E-K  $\rightarrow$  P.235, BRC3-K  $\rightarrow$  P.235) is available for the ratchet head.
- \* Measurement scale is N·m scale only.  
(Simple conversion formula:  $1\text{kgf}\cdot\text{m}\approx 10\text{N}\cdot\text{m}$   $1\text{N}\cdot\text{m}\approx 0.1\text{kgf}\cdot\text{m}$ )
- \* Repair parts are set.  $\rightarrow$  Refer to "Repairable List" from P.625.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Please set the torque to the lowest value when storing the product.



### 3/8"sq. TORQUE WRENCH PRE-SET TYPE

- 
- 
- 
- 
- 



No.	Torque measurement range (N·m)	Min. scale	L	B	T1	T2	Weight (kg)	□	
GW010-03	2~ 10	0.1	317.4	22	10	37.5	0.5	1	
GW025-03	5~ 25	0.1	317.4	22	10	37.5	0.5	1	
GW050-03	10~ 50	0.25	374.9	33	13.7	37.5	0.6	1	
GW100-03	20~100	0.5	446.9	33	13.7	44.5	1	1	

- Measuring direction is right (clockwise), measurement accuracy  $\pm 3$
- Highly visible scale for more comfortable torque adjustment work.
- Comes with a special plastic case for convenient storage.
- The grip is made of elastomer resin that resists deterioration and provides a good fit.
- A lock mechanism is set to prevent unintentional change of the torque setting value.
- A repair kit (GW-03A-K, GWC-03A-K  $\rightarrow$  P.425) is available for the ratchet head.
- \* Repair parts are set.  $\rightarrow$  Refer to "Repairable List" from P.625.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Please set the torque to the lowest value when storing the product.

### REPAIR KIT FOR 3/8"sq. RATCHET HEAD

- 
- 



No.	Contents	Weight(g)
GW-03A-K	1 each of drive gear, claw, steel ball, spring, lever, small screw, lid, and small screw $\times 2$	71

- Repair kit for 3/8 "sq. torque wrench pre-set type (GW050-03, GW100-03  $\rightarrow$  P.425) and 3/8 "sq. torque wrench pre-lock type (GW050-03T  $\rightarrow$  P.431).

### REPAIR KIT FOR 3/8"sq. RATCHET HEAD

- 
- 



No.	Contents	Weight(g)
GWC-03A-K	1 each of drive gear, claw, steel ball, spring, lever, small screw, lid, and small screw $\times 2$	31

- Repair kit for 3/8 "sq. torque wrench pre-set type (GW010-03, GW025-03  $\rightarrow$  P.425) and 3/8 "sq. torque wrench pre-lock type (GW025-03T  $\rightarrow$  P.431).

• Function mark is indicated under the product name. For the details, please refer to  $\rightarrow$  P.004-005.  
• Products marked with should be ordered after checking stock.

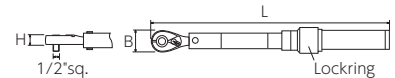


1/2"sq. TORQUE WRENCH PRE-SET TYPE



No.	Torque measurement range (N·m)	Min. scale	L	B	H	Weight (kg)	⊠
CMPC0504	10~ 50	0.5	335	33	13.7	1	1
CMPC1004	20~100	0.5	400	33	13.7	1.2	1
CMPC2004	40~200	2	480	39.5	18	1.4	1
CMPC3004	60~300	2	485	39.5	18	1.4	1

- Measuring direction is right (clockwise), measurement accuracy ±3
- Comes with a plastic case for convenient storage.
- The ratchet head is equipped with a repair kit (BR4E-K ⊕ P.251, BRC4-K ⊕ P.426) is set.
- \* Measurement scale is N·m scale only.  
(Simple conversion formula: 1kgf·m≐10N·m 1N·m≐0.1kgf·m)
- \* Repair parts are set. ⊕ Refer to "Repairable List" from P.625.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Please set the torque to the lowest value when storing the product.



REPAIR KIT FOR 1/2"sq. RATCHET HEAD



No.	Contents	Weight(g)
BRC4-K	Drive gear, claw, steel ball, spring, lever, pan head screw, lid, each 1 flat-head screw × 2	75

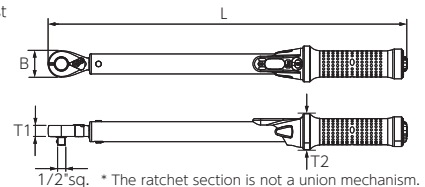
- Repair kit for 1/2 "sq. torque wrench pre-set type (CMPC0504,1004 ⊕ P.426).

1/2"sq. TORQUE WRENCH PRE-SET TYPE



No.	Torque measurement range (N·m)	Min. scale	L	B	T1	T2	Weight (kg)	⊠
GW100-04	20~100	0.5	446.9	33	13.7	44.5	1	1
GW200-04	40~200	1	531.3	39.5	18	44.5	1.3	1
GW300-04	60~300	2	623.2	39.5	18	44.5	1.6	1

- Measuring direction is right (clockwise), measurement accuracy ±3
- Highly visible scale for more comfortable torque adjustment work.
- Comes with a special plastic case for convenient storage.
- The grip is made of elastomer resin that resists deterioration and provides a good fit.
- A lock mechanism is set to prevent unintentional change of the torque setting value.
- A repair kit (GW-04A-K ⊕ P.426, GWC-04A-K ⊕ P.426) is available for the ratchet head.
- \* Repair parts are set. ⊕ Refer to "Repairable List" from P.625.
- \* Please set the torque to the lowest value when storing the product.



REPAIR KIT FOR 1/2"sq. RATCHET HEAD



No.	Contents	Weight(g)
GW-04A-K	Drive gear, claw, steel ball, spring, lever, pan head screw, lid, each 1 flat-head screw × 2	144

- Repair kit for 1/2 "sq. torque wrench pre-set type (GW200-04, GW300-04 ⊕ P.426) and 1/2 "sq. torque wrench pre-lock type (GW200-04T, GW300-04T ⊕ P.431).

REPAIR KIT FOR 1/2"sq. RATCHET HEAD



No.	Contents	Weight(g)
GWC-04A-K	Drive gear, claw, steel ball, spring, lever, pan head screw, lid, each 1 flat-head screw × 2	75

- Repair kit for 1/2 "sq. torque wrench pre-set type (GW100-04 ⊕ P.426) and 1/2 "sq. torque wrench pre-lock type (GW100-04T ⊕ P.431).

1/2"sq. wheel nut torque wrench are listed under Automotive Tools.



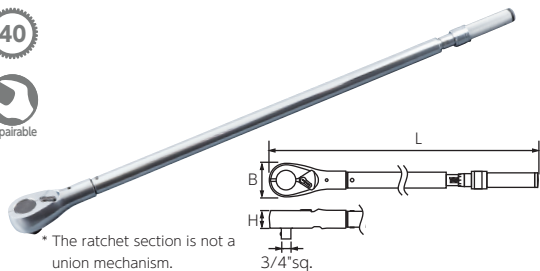
1/2"sq. wheel nut torque wrench ⊕ P.556



1/2"sq. torque wrench for wheel mounting ⊕ P.556

- Measurement instruments should be calibrated once a year. For details, ⊕ P.025.
- Do not disassemble or modify the product.

### 3/4"sq. TORQUE WRENCH PRE-SET TYPE



No.	Torque measurement range (N·m)	Min. scale	L	B	H	Weight (kg)	☐
CMPB8006	160~800	5	1050	71	36	5.8	1

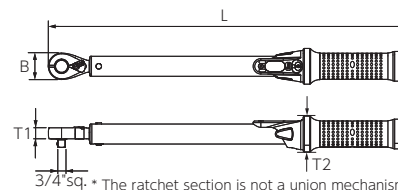
- Capable of measuring in both left and right directions. Measurement accuracy of ±4% (accuracy guaranteed from 160 N·m)
- Comes with a plastic case for convenient storage.
- A repair kit (BR6A-K ➔ P.261) is available for the ratchet head.
- \* Measurement scale is N·m scale only. (Simple conversion formula: 1kgf·m≐10N·m 1N·m≐0.1kgf·m)
- \* Repair parts are set. ➔ Refer to "Repairable List" from P.625.
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Please set the torque to the lowest value when storing the product.

### 3/4"sq. TORQUE WRENCH PRE-SET TYPE

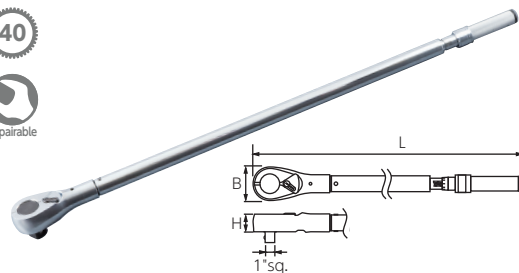


No.	Torque measurement range (N·m)	Min. scale	L	B	T1	T2	Weight (kg)	☐
GW600-06	100~ 600	2	1039.7	70.6	35.5	44.5	5.3	1
GW800-06	150~ 800	5	1155.2	70.6	35.5	44.5	5.6	1
GW1000-06	200~1000	5	1155.2	70.6	35.5	44.5	5.6	1

- Capable of measurement in both left and right directions. Measurement accuracy is ±4%.
- Highly visible scale for more comfortable torque adjustment work.
- Comes with a special plastic case for convenient storage.
- The grip is made of elastomer resin that resists deterioration and provides a good fit.
- A lock mechanism is set to prevent unintentional change of the torque setting value.
- A repair kit (BR6A-K ➔ P.261) is available for the ratchet head.
- \* Repair parts are set. ➔ Refer to "Repairable List" from P.625.
- \* Please set the torque to the lowest value when storing the product.



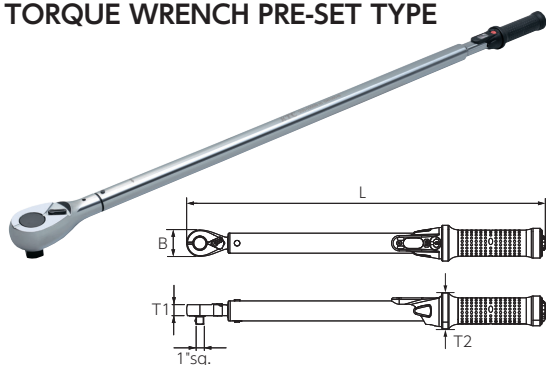
### 1"sq. TORQUE WRENCH PRE-SET TYPE



No.	Torque measurement range (N·m)	Min. scale	L	B	H	Weight (kg)	☐
CMPB8008	160~800	5	1050	71	36	5.8	1

- Capable of measuring in both left and right directions. Measurement accuracy of ±4% (accuracy guaranteed from 160 N·m)
- Comes with a special plastic case for convenient storage.
- Repair kit (BR8A-K ➔ P.267) is set for the ratchet head section.
- \* Measurement scale is N·m scale only. (Simple conversion formula: 1kgf·m≐10N·m 1N·m≐0.1kgf·m)
- \* It is recommended that the repair kit be calibrated and adjusted if used.
- \* Repair parts are set. ➔ Refer to "Repairable List" from P.625.
- \* Please set the torque to the lowest value when storing the product.

### 1"sq. TORQUE WRENCH PRE-SET TYPE



No.	Torque measurement range (N·m)	Min. scale	L	B	T1	T2	Weight (kg)	☐
GW1000-08	200~1000	5	1155.2	70.6	35.5	44.5	5.8	1

- Capable of measurement in both left and right directions. Measurement accuracy is ±4%.
- Highly visible scale for more comfortable torque adjustment work.
- Comes with a special plastic case for convenient storage.
- The grip is made of elastomer resin that resists deterioration and provides a good fit.
- A lock mechanism is set to prevent unintentional change of the torque setting value.
- Repair kit (BR8A-K ➔ P.267) is set for the ratchet head section.
- \* Repair parts are set. ➔ Refer to "Repairable List" from P.625.
- \* Please set the torque to the lowest value when storing the product.

### TORQUE DRIVER PRE-SET TYPE



No.	Torque measurement range (cN·m)	Minimum scale (cN·m)	D	L	Weight (g)	☐
☑ GDP-080	16~ 80	1	28	140	212	1
☑ GDP-200	40~200	2	28	159	249	1
☑ GDP-450	90~450	5	32	171	330	1

- \* Only cN·m scale is used for measurement. (100cN·m=1N·m)
- When the set torque is reached, the grip will rotate approximately 90 degrees with a click feeling.
- Measurement accuracy of ±6% meets ISO standards. Measurement direction is clockwise only.
- Bits are magnetic detachable, and bit with 6.3mm axis can be used. ➔ P.361
- \* Double-headed bits cannot be used.
- \* Some sizes cannot be held magnetically when 1/4"sq. adapters are used.
- \* Please set the torque to the lowest value when storing the product.

• Function mark is indicated under the product name. For the details, please refer to ➔ P.004-005.  
 • Products marked with ☑ should be ordered after checking stock.





## INTERCHANGEABLE TORQUE WRENCH PRE-SET TYPE SET

9  
12

Repair  
Spare parts

Repairable



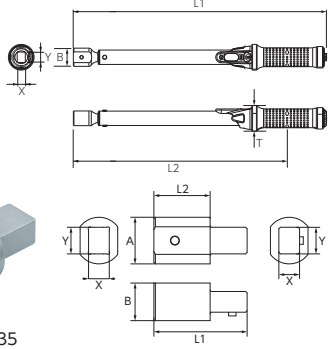
TGW050103



With special plastic case  
\* Case specifications have a possibility to change.



KTC standard drive size is adopted based on German TL standard.



GX0912-E33



GX0912-E35

No.	Torque wrench No.	Extension Replacement Head No.	Exclusive resin case size	Weight (kg)	⊞	
TGW010103	GW010-X0912	GX0912-E33	GX0912-E35	0.7	1	
TGW025103	GW025-X0912	GX0912-E33	GX0912-E35	W400×D73×H60	0.7	1
TGW050103	GW050-X0912	GX0912-E33	GX0912-E35	0.7	1	
TGW100103	GW100-X0912	GX0912-E33	GX0912-E35	W495×D78×H85	1.2	1

- Measuring direction is right (clockwise), measurement accuracy ±3
- New grip mechanism for easy viewing of torque adjustment values.
- An interchangeable head pre-set torque wrench that uses the KTC standard drive size based on the German TL standard, which further expands the range of use.
- Comes with a special plastic case for convenient storage.

### Interchangeable torque wrench pre-set type (Not sold individually).

No.	drive size (X×Y)	Torque measurement range (N·m)	Min. scale	L1	L2	B	T	Weight (kg)
GW010-X0912	9×12	2~10	0.1	303	243.3	22	37.5	0.5
GW025-X0912	9×12	5~25	0.1	303	243.3	22	37.5	0.5
GW050-X0912	9×12	10~50	0.25	343	283.2	22	37.5	0.5
GW100-X0912	9×12	20~100	0.5	415	348.6	22	44.5	1

\* Repair parts are set. Refer to "Repairable List" from P.625.

\* Please set the torque to the lowest value when storing the product.



• Be sure to use it with the supplied extension replacement head.

### Spare parts (9x12 extension replacement head)

No.	A	B	L1	L2	drive size (concavity/convexity) (X×Y)	Weight (g)	⊞
GX0912-E33	21.9	17.6	49.5	33	9×12	81	1
GX0912-E35	21.9	17.6	51.5	35.5	9×12	88	1

• The X and Y dimensions of the concave and convex sides are the same.



Check here for head application chart

## INTERCHANGEABLE TORQUE WRENCH PRE-SET TYPE SET

14  
18

Repair  
Spare parts

Repairable



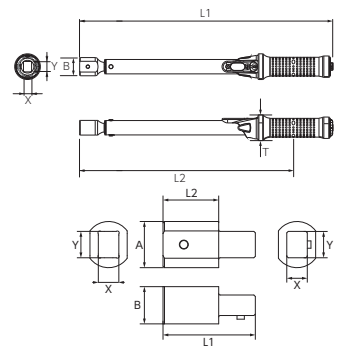
TGW100202



With special plastic case  
\* Case specifications have a possibility to change.



KTC standard drive size is adopted based on German TL standard.



No.	Torque wrench No.	Extension Replacement Head No.	Exclusive resin case size	Weight (kg)	⊞	
TGW100202	GW100-X1418	GX1418-E38	—	W495×D78×H85	1.1	1
TGW200202	GW200-X1418	GX1418-E38	—	W650×D78×H85	1.3	1
TGW300202	GW300-X1418	GX1418-E38	—	W650×D78×H85	1.5	1

- Measuring direction is right (clockwise), measurement accuracy ±3
- New grip mechanism for easy viewing of torque adjustment values.
- An interchangeable head pre-set torque wrench that uses the KTC standard drive size based on the German TL standard, which further expands the range of use.
- Comes with a special plastic case for convenient storage.

### Interchangeable torque wrench pre-set type (Not sold individually).

No.	drive size (X×Y)	Torque measurement range (N·m)	Min. scale	L1	L2	B	T	Weight (kg)
GW100-X1418	14×18	20~100	0.5	438.3	372	31.5	44.5	1
GW200-X1418	14×18	40~200	1	505.2	439.1	31.5	44.5	1.2
GW300-X1418	14×18	60~300	2	597.3	531	31.5	44.5	1.4

\* Repair parts are set. Refer to "Repairable List" from P.625.

\* Please set the torque to the lowest value when storing the product.



• Be sure to use it with the supplied extension replacement head.

### Spare parts (14x18 extension replacement head)

No.	A	B	L1	L2	drive size (concavity/convexity) (X×Y)	Weight (g)	⊞
GX1418-E38	31.5	25.3	63	38	14×18	91	1

• The X and Y dimensions of the concave and convex sides are the same.



Check here for head application chart

• Measurement instruments should be calibrated once a year. For details, refer to P.025.  
• Do not disassemble or modify the product.



### OPEN-END WRENCH HEAD FOR TORQUE WRENCH

9  
12



GX0912-S14



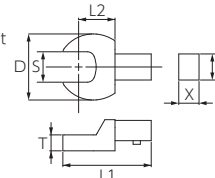
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No.	drive size (X×Y)	S	D	T	L1	L2	Weight (g)	☐
GX0912-S08	9×12	8	22	5.7	37.6	17.5	39	1
GX0912-S10	9×12	10	24.8	5.7	39.8	17.5	40	1
GX0912-S11	9×12	11	26	5.7	39.8	17.5	41	1
GX0912-S12	9×12	12	27.5	5.7	39.8	17.5	41	1
GX0912-S13	9×12	13	28.8	5.7	40	17.5	43	1
GX0912-S14	9×12	14	31.5	7.7	43	20	55	1
GX0912-S16	9×12	16	36	7.7	44	20	59	1
GX0912-S17	9×12	17	37.7	7.7	44	20	60	1

- Replacement head for interchangeable torque wrench pre-set type.
- When using with Digital ratchet and Digital ratchet [MEMORQ], use the Interchangeable head adapter GX13-A0917 to A0920 P.418.
- Suitable for locations where a socket or Box end wrench cannot be used, or where there is not enough space for tightening.



· When using interchangeable torque wrench pre-set type, be sure to use it with the extension interchangeable head installed.



### OPEN-END WRENCH HEAD FOR TORQUE WRENCH

14  
18



GX1418-S14



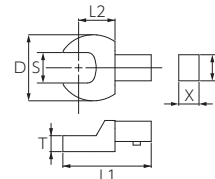
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No.	drive size (X×Y)	S	D	T	L1	L2	Weight (g)	☐
GX1418-S13	14×18	13	29.5	7	58	25	116	1
GX1418-S14	14×18	14	31.4	7	58	25	117	1
GX1418-S15	14×18	15	33.5	7	58	25	118	1
GX1418-S16	14×18	16	36	7	58.5	25	124	1
GX1418-S17	14×18	17	37	9	58.5	25	138	1
GX1418-S18	14×18	18	39	9	60.4	25	132	1
GX1418-S19	14×18	19	40.6	9	61.5	25	139	1
GX1418-S21	14×18	21	45.5	11	61.5	25	155	1
GX1418-S22	14×18	22	47.3	11	62.3	25	163	1
GX1418-S24	14×18	24	50.8	11	63.2	25	164	1

- Replacement head for interchangeable torque wrench pre-set type.
- Suitable for locations where a socket or Box end wrench cannot be used, or where there is not enough space for tightening.



· When using interchangeable torque wrench pre-set type, be sure to use it with the extension interchangeable head installed.



### BOX-END WRENCH HEAD FOR TORQUE WRENCH

9  
12



GX0912-M14



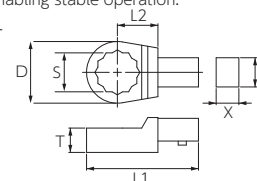
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No.	drive size (X×Y)	S	D	T	L1	L2	Weight (g)	☐
GX0912-M08	9×12	8	19.8	8	40.8	17.5	38	1
GX0912-M10	9×12	10	20	8	42.6	17.5	40	1
GX0912-M11	9×12	11	20.2	8	43.5	17.5	43	1
GX0912-M12	9×12	12	22.2	12	44	17.5	51	1
GX0912-M13	9×12	13	22.2	12	44.5	17.5	52	1
GX0912-M14	9×12	14	23.5	12	46	17.5	53	1
GX0912-M16	9×12	16	26.4	13	47	17.5	57	1
GX0912-M17	9×12	17	27.3	13	47.3	17.5	59	1

- Replacement head for interchangeable torque wrench pre-set type.
- The thin head can be used in tight spaces where a socket wrench cannot be used.
- The head does not easily detach from the bolt and nut, enabling stable operation.



· When using interchangeable torque wrench pre-set type, be sure to use it with the extension interchangeable head installed.



· Function mark is indicated under the product name. For the details, please refer to P.004-005.  
 · Products marked with should be ordered after checking stock.



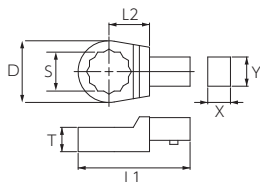
## BOX-END WRENCH HEAD FOR TORQUE WRENCH

14  
18

GX1418-M14



Combined image



No.	drive size (X×Y)	S	D	T	L1	L2	Weight (g)	⊖
GX1418-M13	14×18	13	30	12	61.5	25	128	1
GX1418-M14	14×18	14	30	12	62	25	127	1
GX1418-M15	14×18	15	30	12	62.5	25	128	1
GX1418-M16	14×18	16	30	12	62.5	25	129	1
GX1418-M17	14×18	17	30.5	12.5	64	25	134	1
GX1418-M18	14×18	18	30.5	12.5	64.5	25	134	1
GX1418-M19	14×18	19	31	12.5	66	25	138	1
GX1418-M21	14×18	21	33.4	15	67.4	25	151	1
GX1418-M22	14×18	22	35.2	15	68	25	154	1
GX1418-M24	14×18	24	37.4	15	69.5	25	154	1

- Replacement head for interchangeable torque wrench pre-set type.
- The thin head can be used in tight spaces where a socket wrench cannot be used.
- The head does not easily detach from the bolt and nut, enabling stable operation.



- When using interchangeable torque wrench pre-set type, be sure to use it with the extension interchangeable head installed.

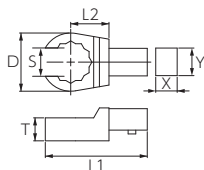
## CROWFOOT WRENCH HEAD FOR TORQUE WRENCH

9  
12

GX0912-NS14



Combined image



No.	drive size (X×Y)	S	D	T	L1	L2	Weight (g)	⊖
GX0912-NS10	9×12	10	21.2	12	42.3	17.5	52	1
GX0912-NS11	9×12	11	22.6	12	42.8	17.5	53	1
GX0912-NS12	9×12	12	24.1	12	43.4	17.5	54	1
GX0912-NS13	9×12	13	25.2	12	43.7	17.5	54	1
GX0912-NS14	9×12	14	27.3	13	44.5	17.5	58	1
GX0912-NS16	9×12	16	30.1	13	45.4	17.5	60	1
GX0912-NS17	9×12	17	31.6	13	45.9	17.5	62	1
GX0912-NS18	9×12	18	33.3	15	46.1	17.5	67	1
GX0912-NS19	9×12	19	34.6	15	46.8	17.5	68	1
GX0912-NS21	9×12	21	37.7	15	48	17.5	72	1

- Replacement head for interchangeable torque wrench pre-set type.
- For fastening flare nuts used in hydraulic piping for automobiles and general industrial machinery.



- When using interchangeable torque wrench pre-set type, be sure to use it with the extension interchangeable head installed.

## ADAPTER HEAD FOR TORQUE WRENCH

14  
18 → 9  
12

GX0914

9  
12 → 14  
18

GX1409



GX0914

GX1409

No.	Drive size				Weight (g)	⊖		
	A	B	L1	L2				
GX0914	21.5	17.6	45	20	9×12	14×18	81	1
GX1409	31.5	25.3	50	34	14×18	9×12	139	1

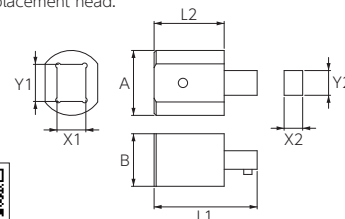
- Adapter for converting the drive size of the replacement head.



- When an adapter replacement head is installed, the effective length must be calculated separately.

- \* Click here to see how to convert a preset type torque wrench with interchangeable head.

→ <https://ktc.jp/support/gw-x>



### トルクレンチヘッド交換式 適用表



\* There's a possibility that screen design changes without notice.

## Torque wrench head interchangeable type Application table

You can search for torque wrenches applicable to the head shape and size you want to use, as well as the necessary adapters and extensions. "Torque conversion rates" for different combinations are also listed.



<https://ktc.jp/support/gw-x>

# Torque wrench pre-lock type (Corporate exclusive products)

- Single function type torque wrench that can fix any target torque value for a specific job.
- The end cap disassembly tool is required for torque adjustment, preventing operator error in torque setting.

• This is a product sold exclusively to corporations. Pre-locked torque wrenches do not have a scale for torque setting.  
 • If you want to set and adjust the torque by yourself, please be sure to prepare a torque wrench tester.  
 (Accuracy cannot be guaranteed if set by yourself)



End caps to prevent misoperation of torque setting



Comes with a special plastic case for convenient storage

## 1/4"sq. TORQUE WRENCH PRE-LOCK TYPE



Spare parts



Repairable

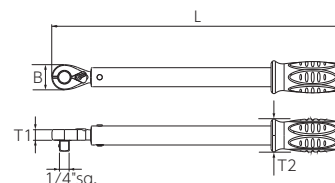


GW010-02T

GW025-02T

No.	Torque measurement range (N·m)	L	B	T1	T2	Weight (kg)	Measuring direction	Torque accuracy	☐	
GW010-02T	2~10	220.8	22	10	35	0.4	Right	±3%	1	
GW025-02T	5~25	271.7	22	10	35	0.4	Right	±3%	1	

- Tightening of bolts and nuts at set torque.
- Suitable for continuous operation at constant torque.
- The end cap disassembly tool is required for torque adjustment, preventing operator error in torque setting.
- The thick elastomer grip is easy to grip.
- The case is convenient for storage.
- Measurement direction is to the right.(Clockwise)
- A repair kit (GW-02A-K Ⓢ P.424) is available for the ratchet head.



## 3/8"sq. TORQUE WRENCH PRE-LOCK TYPE



Spare parts



Repairable

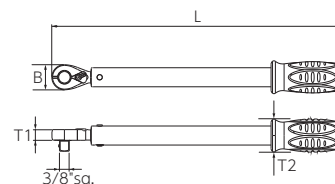


GW025-03T

GW050-03T

No.	Torque measurement range (N·m)	L	B	T1	T2	Weight (kg)	Measuring direction	Torque accuracy	☐	
GW025-03T	5~25	271.7	22	10	35	0.4	Right	±3%	1	
GW050-03T	10~50	289.2	33	13.7	35	0.5	Right	±3%	1	

- Tightening of bolts and nuts at set torque.
- Suitable for continuous operation at constant torque.
- The end cap disassembly tool is required for torque adjustment, preventing operator error in torque setting.
- The thick elastomer grip is easy to grip.
- The case is convenient for storage.
- Measurement direction is to the right.(Clockwise)
- A repair kit (GW-03A-K, GWC-03A-K Ⓢ P.425) is available for the ratchet head.



## 1/2"sq. TORQUE WRENCH PRE-LOCK TYPE



Spare parts



Repairable



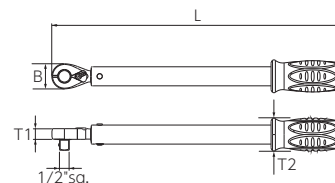
GW100-04T

GW200-04T

GW300-04T

No.	Torque measurement range (N·m)	L	B	T1	T2	Weight (kg)	Measuring direction	Torque accuracy	☐	
GW100-04T	20~100	387.8	33	13.7	43.5	1	Right	±3%	1	
GW200-04T	40~200	432	39.5	18	43.5	1.2	Right	±3%	1	
GW300-04T	60~300	517.2	39.5	18	43.5	1.3	Right	±3%	1	

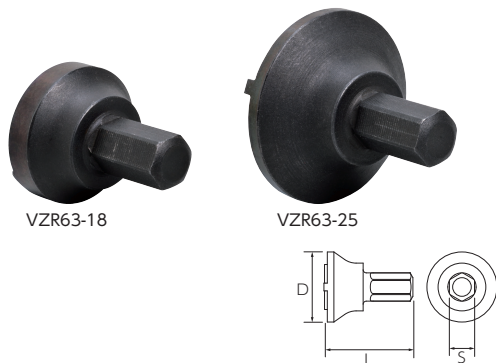
- Tightening of bolts and nuts at set torque.
- Suitable for continuous operation at constant torque.
- The end cap disassembly tool is required for torque adjustment, preventing operator error in torque setting.
- The thick elastomer grip is easy to grip.
- The case is convenient for storage.
- Measurement direction is to the right. (Clockwise)
- A repair kit (GW-04A-K Ⓢ P.426, GWC-04A-K Ⓢ P.426) is available for the ratchet head.



• Function mark is indicated under the product name. For the details, please refer to Ⓢ P.004-005.  
 • Products marked with Ⓢ should be ordered after checking stock.



## MAINTENANCE TOOL FOR TORQUE WRENCH FOR PRE-LOCK TYPE



VZR63-18

VZR63-25

No.	L	D	S	Weight(g)	⊖	
VZR63-18	23	18	6.3	16	1	
VZR63-25	23	25	6.3	20	1	

- Can be used as a single function torque wrench that can be adjusted by the customer using an end-cap disassembly tool and a torque wrench tester.
- \* Set to the lowest value in the guaranteed accuracy range at the time of shipment.
- Torque setting service is also available for a fee.



CAUTION

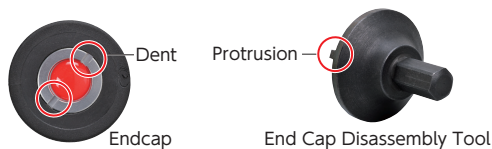
- This is a product sold exclusively to corporations. Pre-locked torque wrenches do not have a scale for torque setting.
- When setting and adjusting torque by yourself, be sure to prepare a torque wrench tester.  
(Accuracy cannot be guaranteed if set by yourself.)

### Application

No.	Contents
VZR63-18	GW010-02T, GW025-02T, GW0025-03T, GW050-03T
VZR63-25	GW100-04T, GW200-04T, GW300-04T

### How to use the end cap disassembly tool

The end cap disassembly tool is installed and removed by aligning the protrusion of the tool with the dent in the end cap and turning the hexagonal part (6.3 mm double-sided width) with a wrench or similar tool.



### ● Installation/removal example using recommended tools



Use a short adjustable wrench (WMS-24) or a interchangeable flat ratchet screwdriver (RM22) for smooth connection and disconnection.

### After-Sales Service

#### ■ Torque setting service

You can place an order using a special order form when purchasing the product. Please download the special order form from the QR code and website (ktc.jp), and apply to the authorized retailer.

\* QR Code is a registered trademark of DENSO WAVE INCORPORATED.

#### ■ Calibration certificate issuance service

We will give you an estimate after we receive the product.

\* Adjustment and repair may be required, which will cost a separate labor charge plus the cost of parts.

\* Please confirm the delivery date with the distributor in each case.

● For inquiries and requests, please contact your local distributor.

# Torque wrench dial type

- The needle type makes it easy to read measured values, and it is also possible to work in places where the dial cannot be seen (for example, when used with the dial facing backwards).
- The unique torsion bar system is adopted for superior durability and precision.
- Measurement can be made in both left and right directions. Measurement accuracy of ±3% in both right and left directions meets ISO standards.
- The zero (0) point of the scale is located on the center of the main unit, making it easy to see and measure.
- Comes with a plastic case for convenient storage.



Easy-to-read dial-type scale



Comes with a plastic case for convenient storage (CMD143 in photo)

## 1/4"sq. TORQUE WRENCH DIAL TYPE



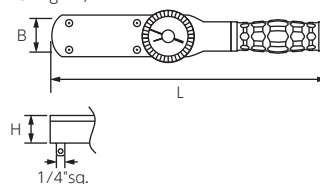
No.	sq.	Torque measurement range (N·m)	Min. scale	L	B	H	Weight (kg)	☐
🔧 CMD0091	1/4"	1.8~9	0.2	290	26	27	0.46	1

• Both left and right directions can be measured. Measurement accuracy is ±3%

\* Measurement scale is N·m scale only.

(Simple conversion formula: 1kgf·m ≅ 10N·m 1N·m ≅ 0.1kgf·m)

\* Do not apply a load bigger than the scale.



## 1/2"sq. TORQUE WRENCH DIAL TYPE



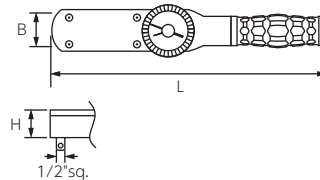
No.	sq.	Torque measurement range (N·m)	Min. scale	L	B	H	Weight (kg)	☐
🔧 CMD243	1/2"	50~240	5	545	48	32	1.34	1
🔧 CMD353	1/2"	70~350	10	545	48	32	1.34	1

• Both left and right directions can be measured. Measurement accuracy is ±3%

\* Measurement scale is N·m scale only.

(Simple conversion formula: 1kgf·m ≅ 10N·m 1N·m ≅ 0.1kgf·m)

\* Do not apply a load bigger than the scale.



• Function mark is indicated under the product name. For the details, please refer to P.004-005.  
 • Products marked with 🔧 should be ordered after checking stock.



**MEASURING EQUIPMENT**

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**DIGITAL TORQUE  
CHECKERS**

DIGITAL TORQUE CHECKER

- 3/8" sq.
- 1/2" sq.
- 3/4" sq.
- 1" sq.
- Repairable



Adopts a display with excellent visibility

No.	sq.	Measuring range (N·m)	Minimum display unit	Display device			Detector					Weight (kg)	
				X	Y	Z	H1	H2	D1	D2	D3		d
GECH050-03	3/8"	0.2~50	0.01	103	108	37.7	63	10	50	90	74	6.3	0.9
GECH200-04	1/2"	2~200	0.1	103	108	37.7	79	15	60	110	90	8.3	1.3
GECH500-06	3/4"	2~500	0.1	103	108	37.7	99	15.5	80	140	116	10.5	2.8
GECH1500-08	1"	20~1500	1	103	108	37.7	102.5	33	100	170	140	13	7.5

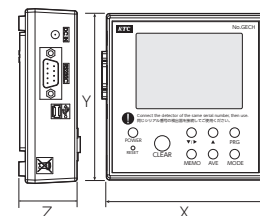
- Torque checks during daily inspections of mechanical torque wrenches, digital torque wrenches, torque drivers, etc.
- Easy to operate torque check makes it ideal for daily inspection of torque wrenches.
- Measurement is possible in 4 modes: "track," "peak hold," "peak down," and "real-time output".

Measurement accuracy	±0.5% (±3 digits for 499 digits or less) * Digit = minimum display unit
Measuring direction	Right and left directions
Data output	RS-232C, USB mini-B
Power	AC adapter or 4 pcs. AA batteries
Composition	Indicator, detector, detector cord, AC adapter, rubber seal, documents (inspection report, calibration certificate, traceability system diagram) * Bolts for fixing the detector and cable for PC connection are not included; only GECH1500-08 comes with a handle.

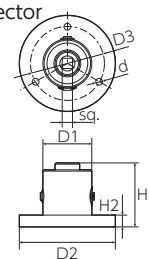


This product is intended for daily inspection. For calibration work including pass/fail judgment, it is recommended to contact the manufacturer of the torque wrench.

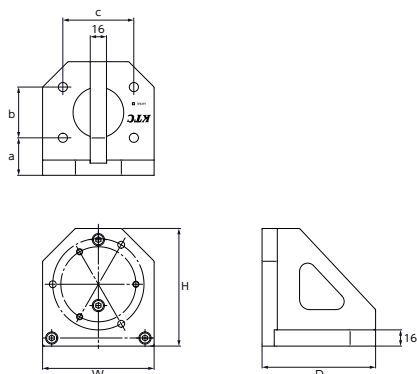
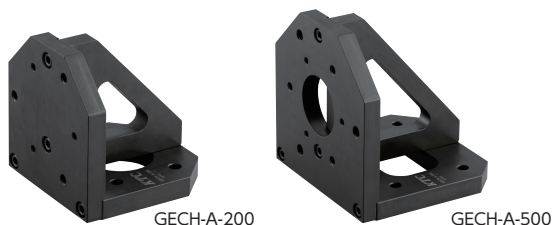
Display device



Detector



JIG FOR DIGITAL TORQUE CHECKER



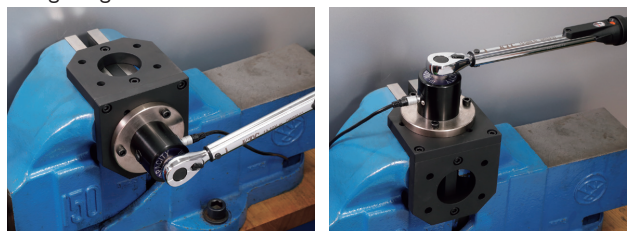
No.	W	H	D	a	b	c	Weight(kg)	⊖
GECH-A-200	110	116	112	25	50	70	2.9	1
GECH-A-500	140	145	132	30	65	100	4.2	1

- Used to fix the detector of the digital torque checker.
- The product can be easily fixed by clamping it between the bench vices.
- Can also be fixed to a workbench.
- The installation direction can be selected according to the usage situation.
- This is a customer-assembled product.

Application

No.	Contents
GECH-A-200	GECH050-03, GECH200-04
GECH-A-500	GECH050-03, GECH200-04, GECH500-06

Using image



• Function mark is indicated under the product name. For the details, please refer to P.004-005.  
• Products marked with should be ordered after checking stock.



# MEASURING EQUIPMENT

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## GAUGES



**CAUTION**

- Read the instruction manual, carefully before use.
- Do not use the gauge in a humid or dusty place or where it is directly exposed to water or oil.
- When reading the measurement value, read it from the front of the gauge.
- Do not use gasoline, thinner, etc. to clean the gauge.
- Do not use the gauge beyond its measuring range.



DIGITAL CALIPER



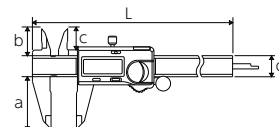
Do not use beyond the measurement range.

Comes with a plastic case for convenient storage

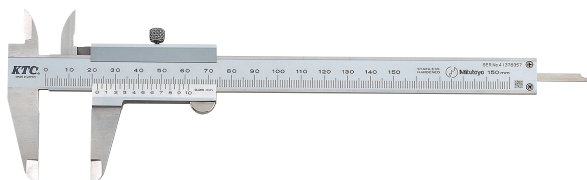
No.	Measuring range (mm)	L	a	b	c	d	Weight (g)	⊖
GND15	0~150	236	40	21	16.5	16	175	1
GND20	0~200	286	50	24	19.5	16	195	1
GND30	0~300	400	60	26	21.5	16	265	1

- Dimensional measurement of parts and products.
- Digital display with excellent visibility is adopted.
- Thumb roller for fine feed of jaws.
- ABS measurement for absolute length and INC measurement function for comparison of two measurement points.
- Auto ON function that automatically turns the power on when the jaw is moved.
- Zero-setting (origin setting) is not required each time the power is turned on.
- The power is automatically turned off if it is not used for about 5 minutes.
- Power-saving and battery life of approximately 2.5 years (using coin-type lithium battery CR1632). Low-voltage warning function. (Battery life varies depending on usage conditions, etc.)

No.	Minimum Display	Tolerance
GND15	0.01	±0.03
GND20	0.01	±0.03
GND30	0.01	±0.04

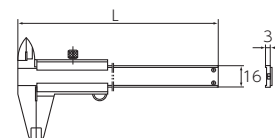


CALIPER



No.	Measuring range (mm)	L	Weight(g)	⊖
GMN-15	0~150	230	150	1
GMN-20	0~200	290	180	1
GMN-30	0~300	405	355	1

- It has a stepped scale to prevent dirt from entering the moving parts.
- \* Repair parts are available. Please contact our distributors for details.

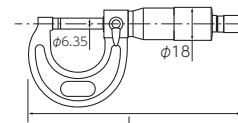


MICROMETER



No.	Measuring range (mm)	Min. amount	L	Weight(g)	⊖
GMM-025	0~25	0.01	120	160	1
GMM-050	25~50	0.01	145	215	1
GMM-075	50~75	0.01	175	315	1

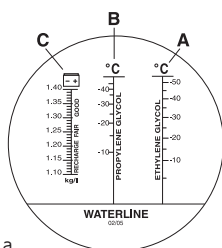
- The frame has a rust-resistant paint finish.
- The measurement surface has a cemented carbide tip.
- Comes with a constant pressure device.



FLUID TESTER



Comes with a special storage bag

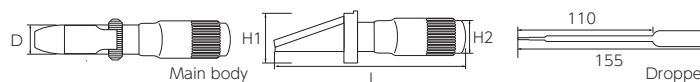


No.	D	H1	H2	L	Weight(g)	⊖
AG601	25	40	32	150	150	1

- Accessories: Liquid measuring dropper, soft case (cloth) for storing the main unit
- Measurement of freezing temperature of cooling water (LLC) (Scale A and B)
  - Specific gravity measurement of battery electrolyte (Scale C)
  - Measurement can be made simply by dropping liquid on the prism surface and looking through the lens.

Measuring range • Cooling water (LLC)...Ethylene : 0 to -55°C (min. scale 5°C)  
 Propylene: 0 to -50°C (min. scale 5°C)  
 • Battery fluid: 1.10 to 1.40 kg/L (minimum scale 0.01 kg/L)

- \* Repair parts are available. Please contact our distributors for details.



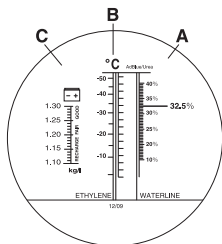
• Function mark is indicated under the product name. For the details, please refer to P.004-005.  
 • Products marked with 1/2" sq. should be ordered after checking stock.



**FLUID TESTER  
(UREA CONCENTRATION TESTING)**



Comes with a special storage bag

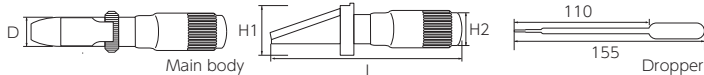


No.	D	H1	H2	L	Weight(g)	⊠
AG602	25	40	32	150	150	1

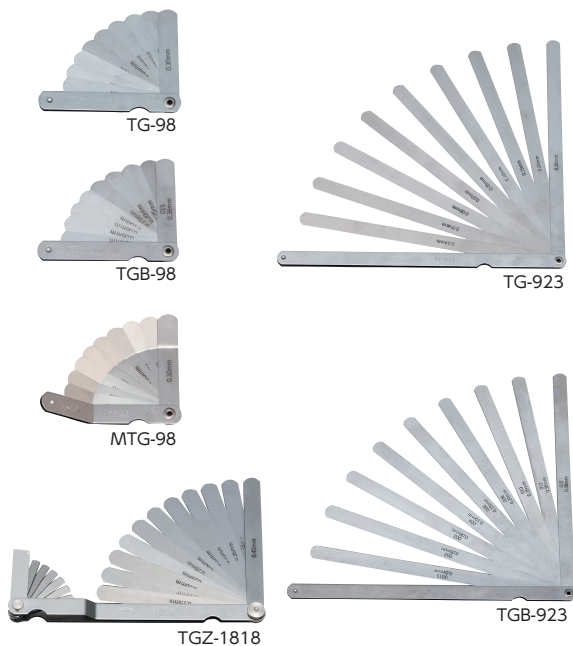
Accessories: Liquid measuring dropper, soft case (cloth) for storing the main unit  
 · Measurement of urea concentration in emission gas purifiers of heavy-duty vehicles (Scale A)  
 · Measurement of freezing temperature of cooling water (LLC) (Scale B)  
 · Specific gravity measurement of battery electrolyte (Scale C)  
 · Measurement can be made simply by dropping liquid on the prism surface and looking through the lens.

Measuring range · Urea concentration ... 15-40% (0.5% minimum scale)  
 · Cooling water(LLC)--Ethylene : 0 to -55° C (min. scale 5° C)  
 · Battery fluid: 1.10 to 1.40 kg/L (minimum scale 0.01 kg/L)

\* Repair parts are available. Please contact our distributors for details.



**THICKNESS GAUGE**



inch

inch

No.	Weight(g)	⊠
TG-98 Japan Standard Machine Tool Type Record 70M	34	1

90×13 set of 9 (mm) | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30

No.	Weight(g)	⊠
TG-923 Japan Standard Machine Tool Type Record 230M	79	1

230×13 set of 9 (mm) | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30

No.	Weight(g)	⊠
TGB-98	34	1

90×13 set of 9 (in) | 0.0015 0.002 0.003 0.004 0.006 0.008 0.010 0.012 0.015

No.	Weight(g)	⊠
TGB-923	79	1

230×13 set of 9 (in) | 0.0015 0.002 0.003 0.004 0.006 0.008 0.010 0.012 0.015

No.	Weight(g)	⊠
MTG-98 (angled)	34	1

90×13 set of 9 (mm) | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30

No.	Weight(g)	⊠
TGZ-1818(Gauge set for maintenance)	100	1

For valve clearance 11-piece set (mm) | 0.15 0.18 0.20 0.25 0.28 0.30 0.33 0.35 0.36 0.38 0.40

For point and plug, set of 6 (mm) | 0.45 0.50 0.80 0.90 1.10 1.30

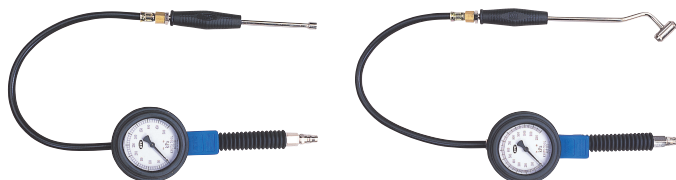
1 plug adjustment hook

Voltage testers are listed under Insulated Tools.



Voltage tester  
 ➔ P.480

Tire air gauges are listed under Automotive Speciality Tools.



Tire Air Gauge  
 ➔ P.547

· Measurement instruments should be calibrated once a year. For details, ➔ P.025.  
 · Do not disassemble or modify the product.