

3. MEASURING TOOLS and EQUIPMENT TORQUE WRENCHES



CAUTION

TORQUE WRENCHES

- BE SURE TO READ INSTRUCTIONS AND OTHER MANUALS BEFORE USE.
- DO NOT USE A TORQUE WRENCH TO LOOSEN BOLTS.
- DO NOT ATTEMPT TO EXTEND BY CONNECTING A PIPE, ETC.
- DO NOT USE A TORQUE WRENCH AS A SUBSTITUTE FOR A HAMMER.
- DO NOT APPLY IMPACT BY HITTING WITH A HAMMER, ETC.
- BE SURE TO INSERT THE SQUARE DRIVE TO THE DEEP END, ETC.

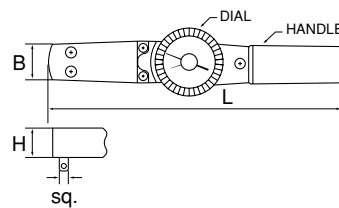
- THE RELATION BETWEEN THE FASTENING TORQUE AND RESISTANT POWER OF THE SCREW VARIES DEPENDING ON PLURAL FACTORS, INCLUDING THE CONDITION AND STRUCTURE OF THE SCREW AND COEFFICIENT OF FRICTION.
- READ THE HANDLING INSTRUCTIONS AND PRECAUTIONS FROM THE MANUFACTURER CAREFULLY BEFORE USING THE TOOL.
- USE THE TORQUE WRENCH WITHIN THE RANGE OF A MEASURABLE TORQUE.
- IT IS RECOMMENDED TO HAVE THE INSTRUMENTS CALIBRATED PERIODICALLY.



● TORQUE WRENCH DIAL TYPE



With Plastic case



CMD484



CMD143



CMD072

TORQUE WRENCH DIAL TYPE

Features

The dial scale is easy to read, and the pointer remains in the measured position to facilitate confirmation of the measurement.

Accuracy

- The unique, long torsion bar shows the torque difference more clearly and makes the measurement more accurate.
- The pointer system allows detailed confirmation of measurement, facilitating accuracy of measurement.

Ease of handling

- The long torsion bar reduces overall size, weight and thickness.
- The measurement scale is indicated in N-m scale in compliance with the SI (international standard). A kgf-cm scale is also provided to meet both past and present standards.
- The scale 0-point located on the center line of the tool facilitates reading as well as counterclockwise torque measurement. Operations in invisible locations (including upside down use of the wrench) are possible thanks to the use of the pointer.

Endurance

- The long torsion bar provides good stability. Without excessive force applied, the tool can maintain high accuracy indefinitely.
- The main body is accommodated by a rugged plastic case that is suitable for protection and storage.

| No. | sq. | Torque Range kgf-cm | Minimum Scale | L | B | H | ▼kg | □ | Main Applications & Purposes |
|---------|------|------------------------|------------------|------|----|------|------|---|--|
| CMD0091 | 1/4" | 1.8 ~ 9 | 0.2 | 290 | 26 | 27 | 0.46 | 1 | Precision measurement and pre-load measurement of low voltage parts and small torque. |
| CMD0172 | 3/8" | 3.5 ~ 17.5 | 0.5 | 290 | 26 | 27 | 0.46 | 1 | Effective for management of small torque such as bearing pre-load measurement. |
| CMD0282 | 3/8" | 6 ~ 28 | 0.5 | 290 | 26 | 27 | 0.46 | 1 | Effective for management of small torque such as bearing pre-load measurement. |
| CMD 072 | 3/8" | 14 ~ 70 | 2 | 375 | 36 | 27 | 0.76 | 1 | 3/8"sq. basic model, widely applicable to passenger vehicles and motorcycles. |
| CMD 143 | 1/2" | 30 ~ 140 | 2 | 545 | 48 | 32 | 1.34 | 1 | 1/2"sq. models which can also be transformed into beam type models. Easy to use with passenger vehicles. |
| CMD 243 | 1/2" | 50 ~ 240 | 5 | 545 | 48 | 32 | 1.33 | 1 | 1/2"sq. models which can also be transformed into beam type models. Easy to use with passenger vehicles. |
| CMD 353 | 1/2" | 70 ~ 350 | 10 | 545 | 48 | 32 | 1.34 | 1 | 1/2"sq. model with a wide application range. |
| CMD 484 | 3/4" | 100 ~ 480 | 10 | 708 | 56 | 39 | 2.78 | 1 | 3/4"sq. model, effective for engines of medium-sized vehicles. |
| CMD 804 | 3/4" | 160 ~ 800 | 20 | 1185 | 56 | 38.5 | 4.1 | 1 | Widely applicable in construction, construction machinery and medium-sized vehicles. |
| CMD 805 | 1" | 160 ~ 800 | 20 | 1185 | 56 | 38.5 | 4.14 | 1 | Widely applicable in construction, construction machinery and medium-sized vehicles. |

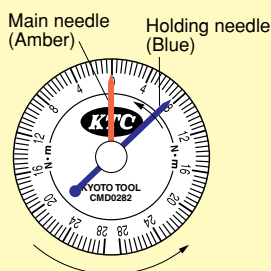
* The graduations on the scale indicates N-m. (1kgf-m ≈ 10N-m 1N-m ≈ 0.1kgf-m)



• DO NOT APPLY A LOAD LARGER THAN THAT WHICH A FULLY LOADED SCALE CAN HANDLE.

● Clockwise torque measurement

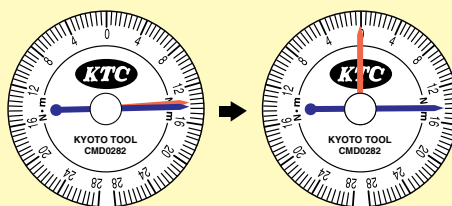
1 Set main pointer needle to 0.



Turn counterclockwise.

Turn dial counter-clockwise to superimpose holding needle (blue) on main needle (amber). Turn dial further until main needle indicates zero on outer scale.

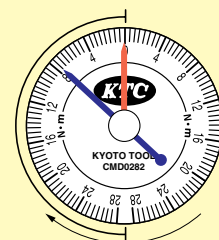
2 Start measurement.



Turn handle clockwise. The main and holding needles swing until the torque value. When tightening force is released, main needle returns to scale 0 automatically while holding needle remains at torque value.

When measuring same torque values successively, it is recommended to leave holding needle in position.

3 To measure the counterclockwise torque:



Turn clockwise

Holding needle is set form reverse direction to clockwise torque measurement, i.e. from left side of main needle (by turning clockwise). Counterclockwise torque should be measured by reading inner scale.

*Please check the merchandise inventory for a product that is marked by before placing an order.

TORQUE WRENCH ADJUSTABLE TYPE

● TORQUE WRENCH ADJUSTABLE TYPE



Features

Because they are capable of setting torque value to be measured prior to measurement, the preset torque wrenches are effective in successive operations or operations in places where scale readout is difficult.

Accuracy

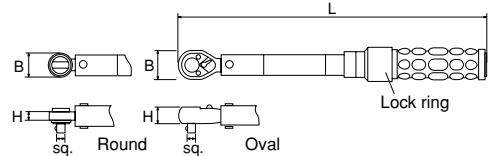
- The unique preset mechanism can set the torque value to be measured easily and accurately in detail.
- The preset value can be locked.

Ease of handling

- The measurement scale is indicated in N·m scale in compliance with the SI (international standard). The scale is stamped so it does not fade out.
- The operator is informed that the preset value is reached by the ratchet which changes angle at the neck.
- The counterclockwise torque can be measured as well as the clockwise torque.
- The head consists of a circular ratchet with a 60-tooth gear (having feed angle 6°), that is suitable for operations in tight spaces.

Endurance

- The main body is accommodated in a rugged plastic case which is suitable for protection and storage.
- The handle grip is made of rubberized material which resists slippage and the effects of shock.
- The entire mechanism is sealed to prevent penetration of dirt and dust, thereby reducing the possibility of malfunction.



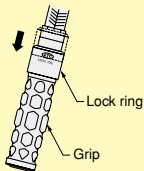
| No. | sq. | Torque Range N·m (kgf·cm) | Minimum Scale | Type | L | B | H | ▼kg | ☑ | Main Applications & Purposes |
|----------|------|------------------------------|------------------|------|------|------|------|-----|---|---|
| CMPB0152 | 1/4" | 3~ 15 | 0.1 | Oval | 247 | 22 | 10 | 0.3 | 1 | Effective for successive tightening with small torque of small parts, etc. |
| CMPB0253 | 3/8" | 5~ 25 | 0.1 | Oval | 278 | 22 | 10 | 0.3 | 1 | Suitable for compact aluminum engines, etc. |
| CMPB0503 | 3/8" | 10~ 50 | 0.5 | Oval | 337 | 33 | 13.5 | 0.8 | 1 | Basic model for motorcycles, but can also be used widely in general applications. |
| CMPB1003 | 3/8" | 20~100 | 0.5 | Oval | 397 | 33 | 13.5 | 0.9 | 1 | 3/8"sq. 1000 kgf type. The standard tool of the future. |
| CMPB0504 | 1/2" | 10~ 50 | 0.5 | Oval | 337 | 33 | 13.5 | 0.8 | 1 | 1/2"sq. compact and easy to use. |
| CMPB1004 | 1/2" | 20~100 | 0.5 | Oval | 397 | 33 | 13.5 | 0.9 | 1 | 1/2"sq. model covering a wide range of torque. |
| CMPB2004 | 1/2" | 40~200 | 2 | Oval | 475 | 39.5 | 18 | 1.2 | 1 | Effective for constructions and medium-sized vehicles. |
| CMPB3004 | 1/2" | 60~300 | 2 | Oval | 480 | 39.5 | 18 | 1.2 | 1 | 1/2"sq. model covering a wide range of torque. |
| CMPB8006 | 3/4" | 150~800 | 5 | Oval | 1050 | 68 | 29 | 4.5 | 1 | |
| CMPB8008 | 1" | 150~800 | 5 | Oval | 1050 | 68 | 27.5 | 4.5 | 1 | |

* The graduations on the scale indicates N·m. (1kgf·m ≒ 10N·m 1N·m ≒ 0.1kgf·m)

⚠ CAUTION • WHEN THE WRENCH GENERATES A "CLICK" SOUND OR YOUR HAND FEELS A LIGHT SHOCK, DO NOT APPLY FURTHER LOAD TO THE WRENCH.
• DO NOT USE THIS WRENCH FOR LOOSENING A BOLT OR NUT.

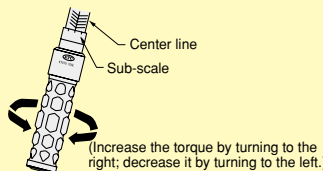
● How to preset the torque.

1 Pull grip down



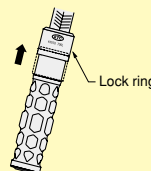
Hold grip and pull it downward while shaking it a little to the left and right.

2 Preset to desired torque



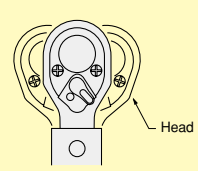
The torque is determined by the main scale and the sub-scale on the grip.

3 Lock the torque.



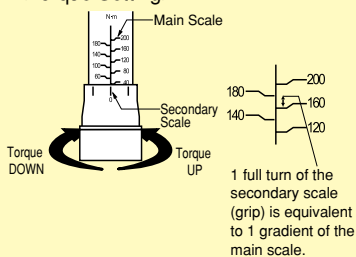
Release your hand from the lock ring, and it will return automatically and the torque will be set.

4 Start measurement.



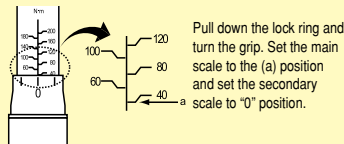
Perform measurement. When preset value is reached, a light shock is felt and neck angle changes.

<Torque Setting>



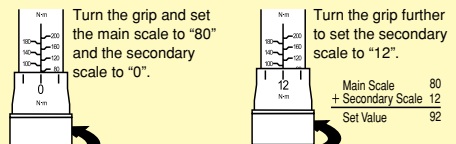
○ Setting the value of the main scale to a set value.

Example) Setting to 40N·m (For CMPA203)



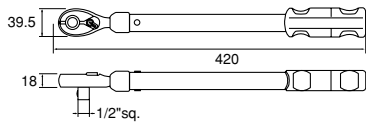
○ Setting a value between the two scales to a set value.

Example) Setting to 92N·m (For CMPA203)



*The turning direction of the grip is reversed when setting the torque from a high level.

●1/2"sq. WHEEL NUT TORQUE WRENCH SET D.PAT.



Compatibility Table (Vehicle make)

| Nut size (mm) | Manufacturer | Examples of Compatible Vehicles |
|--|----------------------|---|
| 19 <small>19mm socket is required (sold separately)</small> | Honda, Subaru | All passenger vehicles (Except recreational and light vehicles) All passenger vehicles |
| | Toyota, Nissan | All passenger vehicles (Except recreational and light vehicles) |
| 21 | Mitsubishi, Daihatsu | All passenger vehicles (Except recreational and light vehicles) |
| | Mazda | All passenger vehicles (Except recreational and light vehicles) |

*The torque value for light vehicles with 17mm nuts differs from the one for regular vehicles. For this reason, the above torque wrench cannot be used. However, the torque wrench can be used on some foreign vehicles made outside of Japan.
 *Compatible to wheel tightening torque value of 103N·Em. (Not applicable to certain vehicles and wheels.)
 *The wrench cannot be used for trucks and recreational vehicles as the torque required is too high.
 *Check the required torque before using the wrench on non-standard wheels.

WHEEL NUT TORQUE WRENCH SET

| | | |
|-----------------------------------|---------|----------|
| No. TWCMPA221 | ▼kg 1.3 | ☞ 1 |
| Torque wrench for wheel nut | | WCMPA103 |
| Socket for 1/2"sq. wheel nut 21mm | | B38Z-21H |

The time has come for all service personnel to have his or her own torque wrench because excessive tightening of impact wrenches very frequently causes trouble. The wheel nut torque wrench has been released to deal with the present situation. The reasonable price of such wrenches make them essential tools to be owned by every operator.

Applications

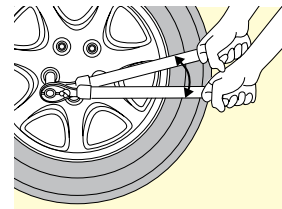
- Preset torque wrench is dedicated for tightening most of 19 or 21 mm automobile wheel nuts at 10.5 kgf-cm torque. (A socket for 19 mm nuts is optionally available.)

Features

- Easily tightens wheel nuts at specified torque.
- Suitable for torque management of vehicles equipped with aluminum wheels as standard, which are becoming increasingly popular.
- Powerful tool for final inspection line checking, as well as for training beginners to become accustomed with the feel of torque force.
- Pre-set type torque wrench for tightening wheel nut at regular torque. (10.5 kgf-m)
- Applicable to most of medium size cars with 19mm or 21mm wheel nut.



- CAUTION • THIS IS A MEASURING TOOL.
- BE SURE TO READ THE INSTRUCTIONS AND OTHER MANUALS BEFORE USE.
 - WHEN THE WRENCH GENERATES A "CLICK" SOUND OR YOUR HAND FEELS A LIGHT SHOCK, DO NOT APPLY FURTHER LOAD TO THE WRENCH.
 - DO NOT USE THIS WRENCH FOR LOOSENING A BOLT OR NUT.
 - DO NOT USE THIS WRENCH WITH LEFT-HAND THREADED NUTS.



Confirm the tightening torque with the wrench positioned between the arrows as shown in the diagram.



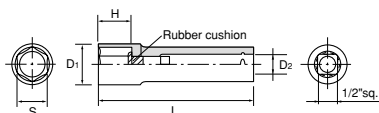
CAUTION

Notes

1. The wheel tightening torque values are those for standard wheels used by Japanese automobile manufacturers. Be sure to check the required torque for special wheels.
2. This product is a measuring tool which should be handled very carefully. Take particular care never to drop, throw or hit it.
3. Always, apply load slowly, centering around the grip line.

4. Accurate torque value may not be obtained if load is applied by using other parts (such as a pipe).
5. When the tool has not been used for a long period, be sure to perform "running-in" before actual measurement.
6. Do not use the tool in rain, under high humidity or in places where it may be subject to water penetration.
7. Do not open the tool. Otherwise, the torque value may deviate.
8. Should operation failure, abnormal noise, dropping or submersion in water occur, immediately stop use and have qualified service personnel inspect and overhaul the tool.

●1/2"sq. SOCKET WRENCHES FOR WHEEL NUTS



WHEEL NUT SOCKET

| No. | S | D ₁ | D ₂ | H | L | ▼g | ☞ |
|------------------|----|----------------|----------------|----|-----|-----|---|
| B38Z -17H | 17 | 24 | 22 | 22 | 100 | 200 | 5 |
| -19H | 19 | 26 | 22 | 24 | 100 | 200 | 5 |
| -21H | 21 | 27.5 | 22 | 26 | 100 | 200 | 5 |
| -22H | 22 | 29.5 | 22 | 27 | 100 | 200 | 5 |

- Two models, both with an overall length of 100 mm, are especially designed for ease of use with wheel nuts. The ease of use can be improved by using a socket wrench together with a torque wrench.
- A built-in rubber cushion attenuates contact with plated and painted wheel nuts.

Applications

| Nut Size (mm) | Maker | Vehicle Models |
|---------------|--------------------------------------|---|
| 22 | Toyota | Recreation vehicles |
| | Toyota, Nissan | All models (except for RVs) |
| 21 | Mitsubishi, Daihatsu | All models (except for RVs and mini-cars) |
| | Mazda | All models (except for mini-cars) |
| 19 | Honda, Subaru | All models (except for mini-cars) |
| | Isuzu | Steel wheel models |
| 17 | Suzuki | Not all models |
| | Mitsubishi | 2WD among light cars |
| | Mazda | Carol and Scrum (10 inch wheel) |
| | Suzuki | Alto (before Oct 94), Carry and Every (10 inch wheel) |
| 17 | Mercedes Benz, Rover, VW, Audi, Opel | All models |
| | | All models |

* Suitable for wheel tightening torque of 10.5 kgf-cm. (Not applicable to some special vehicles and wheels.)

High Basic Performance Ensures Easy Use

- A digital torque wrench with the feel of a ratchet wrench.
- Storage of up to five measurements in memory ideal for frequent operations.
- Advanced torque measuring functions conform to international (ISO) standards.
- Built-in torque unit conversion function useful for maintenance on older or foreign cars.

Large LED Lamp
The large LED lamp is readily visible even from the side.



Ratchet Head
The ratchet head offers the familiar handling of a union mechanism, integrated claw, and 36 gears.

Setting Revision Button

Rigid Grip with Built-in Power Sensor
The built-in sensor accurately detects and analyzes the load applied to the grip to enable more precise torque measurement regardless of work posture and the skill level of the operator.

Grip End
The grip end is made of soft resin for higher visibility and a better fit.

Mode Switching Button

Power Button



GEK060-R3

Dimensions in mm

| No. | sq. | Torque measuring Range (N·m) | B | L | T1 | T2 | ▼g | 📦 |
|-----------|------|------------------------------|------|-----|------|----|-----|---|
| GEK030-R2 | 1/4" | 6~ 30 | 22 | 211 | 10 | 36 | 330 | 1 |
| GEK030-C3 | 3/8" | 6~ 30 | 22 | 211 | 10 | 36 | 330 | 1 |
| GEK060-R3 | 3/8" | 12~ 60 | 33 | 217 | 13.5 | 36 | 400 | 1 |
| GEK085-R3 | 3/8" | 17~ 85 | 33 | 271 | 13.5 | 36 | 440 | 1 |
| GEK085-R4 | 1/2" | 17~ 85 | 39.5 | 274 | 18 | 36 | 590 | 1 |
| GEK135-R4 | 1/2" | 27~135 | 39.5 | 380 | 18 | 36 | 700 | 1 |
| GEK200-R4 | 1/2" | 40~200 | 39.5 | 580 | 18 | 36 | 990 | 1 |

- Model selection guideline: A model in which the actual working torque value falls within 70% of the torque measuring range is recommended.
- * The GEK030-C3 Digital Ratchet is a compact model with a 9.5 sq. drive angle set in a 6.3 sq. ratchet head.
- * Digital Ratchet Wrench is a registered trademark of Kyoto Tool Co., Ltd.

Product Lineup

| | Comes with a small special resin case | Comes with a large special resin case | Comes with a large special resin case and socket set |
|--|---|--|---|
| | | | |
| | GEK060-R3 | GEK060-R3-L | TB306WG1 |
| Application: Normal bolts sized M5 to M10 | No. GEK030-R2 Size: W268xD107xH57 | No. GEK030-R2-L Size: W324xD166xH58 | No. TB206WG1 Size: W324xD166xH58 Content: No. GEK030-R2-L, EHB205 B2-07W, 08W, 10W, 12W, 14W |
| Application: Normal bolts sized M5 to M10 | No. GEK030-C3 Size: W268xD107xH57 | No. GEK030-C3-L Size: W324xD166xH58 | No. TB306WG3 Size: W324xD166xH58 Content: No. GEK030-C3-L, EHB305 B3-07W, 08W, 10W, 12W, 14W |
| Application: Normal bolts sized M8 to M12 | No. GEK060-R3 Size: W268xD107xH57 | No. GEK060-R3-L Size: W324xD166xH58 | No. TB306WG1 Size: W324xD166xH58 Content: No. GEK060-R3-L, EHB305 B3-08W, 10W, 12W, 14W, 17W |
| Application: Normal bolts sized M10 to M14 | No. GEK085-R3 Size: W322xD107xH57 | No. GEK085-R3-L Size: W324xD166xH58 | No. TB306WG2 Size: W324xD166xH58 Content: No. GEK085-R3-L, EHB305 B3-10W, 12W, 14W, 17W, 19W |
| Application: Normal bolts sized M10 to M14 | No. GEK085-R4 Size: W322xD107xH57 | No. GEK085-R4-L Size: W324xD166xH58 | No. TB406WG1 Size: W324xD166xH58 Content: No. GEK085-R4-L, EHB405 B4-10W, 12W, 14W, 17W, 19W |
| Application: Normal bolts sized M12 to M16 | No. GEK135-R4 Size: W428xD107xH57 | <ul style="list-style-type: none"> ● The large special resin case can hold the Digital Torque Ratchet Wrench with socket attached to the socket holder (No. EHB 205, 305, 405). * However, this does not include sockets or bit sockets with an overall length exceeding 70 mm or an outer diameter exceeding 32 mm. | |
| Application: Normal bolts sized M12 to M18 | No. GEK200-R4 Size: W628xD107xH57 | | |

Specification

Name : Digital Ratchet
 Measuring accuracy : ±3% + 1 digit for left- and right-turning threads in the torque measuring range (digit = minimum readout unit)
 For the GEK030-R2 and GEK030-C3: ±4% + 1 digit for left- and right-turning threads in the torque measuring range.
 Measuring direction : Left- and right-turning
 Measuring unit : N·m (switchable to convert to kgf·m, lbf·in, lbf·ft)
 Power supply : Coin-type lithium battery
 No. of storable measurements : 5 (storable target torque values)
 Auto OFF : The power supply will turn off automatically if an operation is not performed within approximately 2 minutes.

CAUTION

- Do not operate the ratchet outside the torque measuring range.
- Do not use pipes or other items to extend the length.
- Do not apply excessive impacts to the Digital Ratchet by using it like a hammer to strike something, or by dropping it.
- The Digital Ratchet is not waterproof.
- Wipe the Digital Ratchet off immediately if chemicals or other liquids are spilled onto it.
- We recommend periodically calibrating the torque to maintain measuring accuracy.

DIGITAL ADJUSTABLE WRENCH

●DIGITAL ADJUSTABLE WRENCH

Digital Adjustable Wrench expands usage wildly.

KTC is dedicated to providing each and every production site with torque control that upholds our commitment to safety, reliability, and quality.

- A digital torque wrench with the feel of an adjustable wrench.
- Storage of up to five measurements in memory ideal for frequent operations.
- Advanced torque measuring functions conform to international (ISO) standards.
- Built-in torque unit conversion function useful for maintenance on older or foreign cars.



Suitable for plumbing work which socket wrench not applied to.



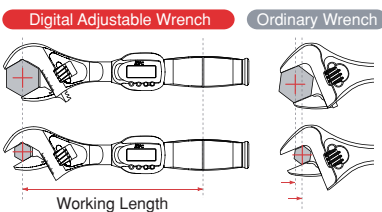
Greater ease of use was explored down to the finest detail.

The new Digital Ratchet features a fixed grip with power sensors for accurate torque measurement regardless of the work posture and the skill level of the operator. New functions, including customizable measuring and display modes, were added to broaden the range of applications. And greater ease of use was explored down to the finest detail to yield features like a larger, easier-to-read LED lamp.



Large LED Lamp is Visible Even from the Side
Working conditions have also been improved by employing an LED lamp that is readily visible even if the display itself is in an awkward position that makes it hard to read, such as in tight, narrow spaces.

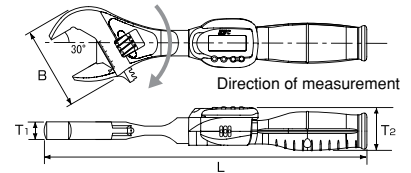
Rigid Grip with Built-in Power Sensor
The built-in sensor accurately detects and analyzes the load applied to the grip to enable more precise torque measurement regardless of the work posture and the skill level of the operator.



Working length (from rotational axis of the bolt to the force applied point) hardly changes even if the opening width changes, which enables high accuracy measurement.



Comes with a special resin case



Dimensions in mm

| No. | Torque measuring Range (N-m) | Min.Readout (N-m) | Applied Size | B | L | T1 | T2 | ▼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 |

- Model selection guideline: A model in which the actual working torque value falls within 70% of the torque measuring range is recommended.
- * Accuracy assured under the below conditions only.
 - shape of measuring object: hexagonal
 - direction of measurement: toward the movable jaw
- ⚠ CAUTION
 - Firmly adjust the mouth to the width of the bolts and nuts.
 - Turn towards the lower jaw.
 - Do not apply strong impact on this tool by hitting it with a hammer, etc.