

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.

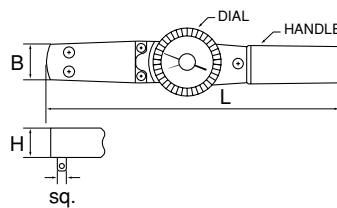
- THE RELATION BETWEEN THE FASTENING TORQUE AND RESISTANT POWER OF THE SCREW VARIES DEPENDING ON PLURAL FACTORS, INCLUDING THE CONDITION AND STRUCTURE OF THE SCREW AND COEFFICIENT OF FRICTION.
- READ THE HANDLING INSTRUCTIONS AND PRECAUTIONS FROM THE MANUFACTURER CAREFULLY BEFORE USING THE TOOL.
- USE 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.

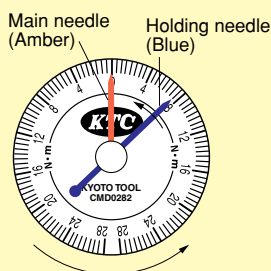
* The graduations on the scale indicates N·m. (1kgf·m ≒ 10N·m 1N·m ≒ 0.1kgf·m)



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

● Clockwise torque measurement

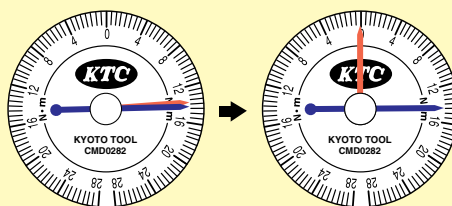
1 Set main pointer needle to 0.



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.

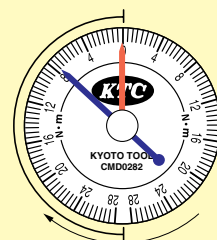
2 Start measurement.



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

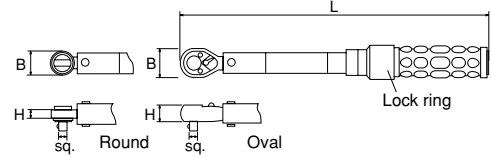
- The unique preset mechanism can set the torque value to be measured easily and accurately in detail.
- The preset value can be locked.

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.



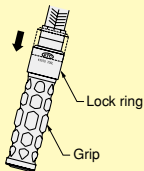
No.	sq.	Torque Range N·m (kgf·cm)	Minimum Scale	Type	L	B	H	▼kg	☑	Main Applications & Purposes
CMPB0152	1/4"	3~ 15	0.1	Oval	247	22	10	0.3	1	Effective for successive tightening with small torque of small parts, etc.
CMPB0253	3/8"	5~ 25	0.1	Oval	278	22	10	0.3	1	Suitable for compact aluminum engines, etc.
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.

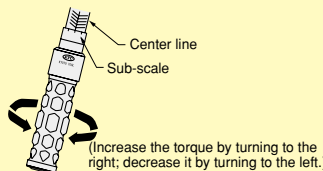
● How to preset the torque.

1 Pull grip down



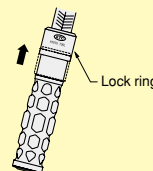
Hold grip and pull it downward while shaking it a little to the left and right.

2 Preset to desired torque



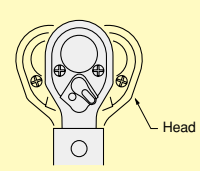
The torque is determined by the main scale and the sub-scale on the grip.

3 Lock the torque.



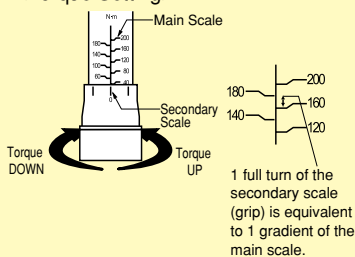
Release your hand from the lock ring, and it will return automatically and the torque will be set.

4 Start measurement.



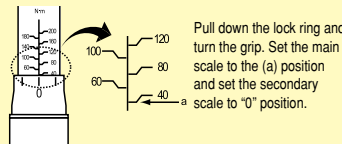
Perform measurement. When preset value is reached, a light shock is felt and neck angle changes.

<Torque Setting>



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

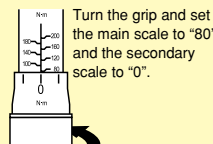
Example) Setting to 40N·m (For CMPA203)



Pull down the lock ring and turn the grip. Set the main scale to the (a) position and set the secondary scale to "0" position.

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

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

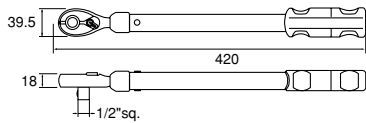


Turn the grip further to set the secondary scale to "12".

Main Scale 80
+ Secondary Scale 12
Set Value 92

*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)
	Isuzu	All passenger vehicles
21	Toyota, Nissan	All passenger vehicles (Except recreational and light vehicles)
	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

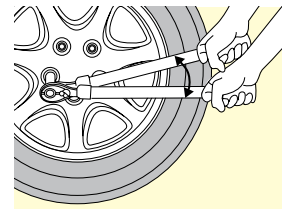
- Preset torque wrench is dedicated for tightening most of 19 or 21 mm automobile wheel nuts at 10.5 kgf-cm torque. (A socket for 19 mm nuts is optionally available.)

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.



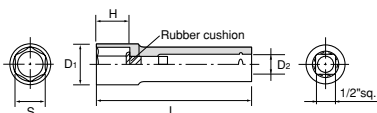
CAUTION

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.)