

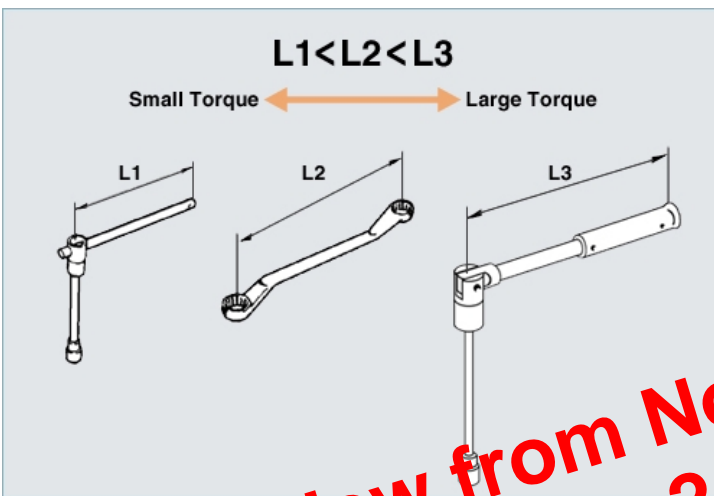
Choose tools according to the speed with which the job can be done.

- A socket wrench is useful in that it can be used to turn bolt / nut without the need for repositioning. This allows for quick turning of bolt / nut.
- A socket wrench can be used in various ways depending on the type of handle that is fitted.

NOTICE:

1. **The ratchet handle** is suitable for use in a confined space. However, due to the ratchet's construction, it is not possible to obtain particularly high torque.
2. **The sliding handle** requires a large work space but offers the fastest operating speed.
3. **The spinner handle** allows for quick work, with setting up the handle. However the handle is long and difficult to use in a confined space.

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Choose tools with consideration for the size of turning torque

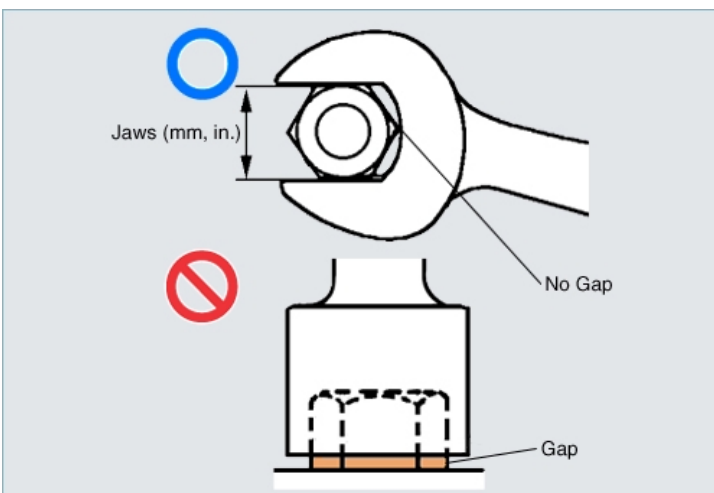
- If a large torque is required for final tightening or initial loosening of a bolt / nut, use a wrench that allows a lot of strength to be applied.

NOTICE:

- The amount of strength that can be applied is dependent on the length of the shaft of the wrench. The longer the shaft, the larger the torque that can be gained from a small amount of force.
- If an excessively long shaft is used, there is a danger of over torque, and the bolt may be stripped.

Preview from Notesale.co.uk
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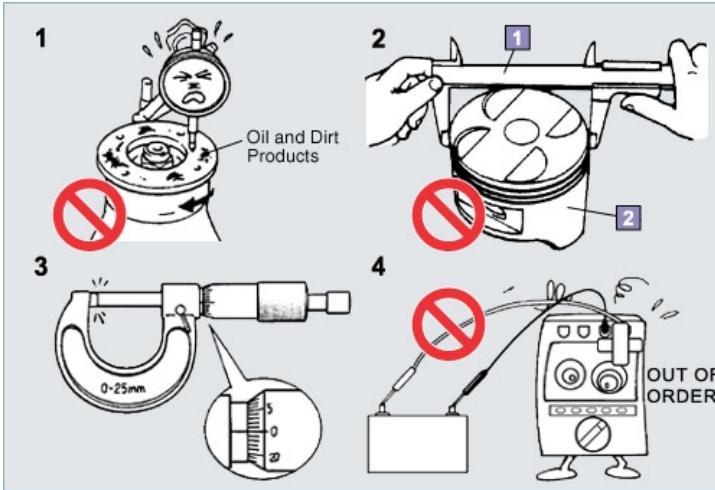


Handling cautions

1. Size and application of the tool

- Make sure the diameter of the tool fits the head of the bolt / nut.
- Fit the tool to the bolt / nut securely.

Measuring Instruments



To Obtain Accurate Measured Values

Measuring instruments are used for diagnosing the condition of a vehicle by checking whether parts dimensions and adjustment conditions match standard values, and whether the parts of a vehicle or engine are functioning properly.

Points to check before measurement:

1. Clean the part to be measured and the measuring instrument

Waste products or oil can lead to errors in measurement values. Surfaces should be cleaned before measuring.

2. Choose a suitable measuring instrument

Select the measuring instrument according to the level of precision required. Bad example: Using a vernier caliper to measure the outer diameter of a piston.

1 Measuring precision: 0.05mm

2 Required precision: 0.01mm

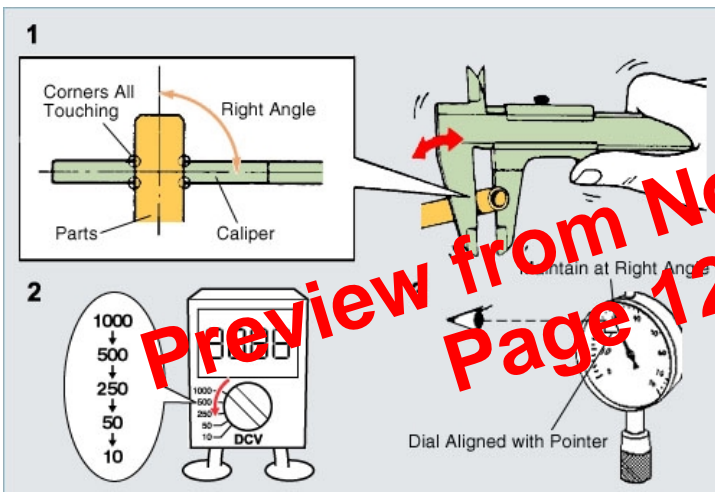
3. Calibrate zero

Check that zero is aligned to its correct position. Zero is the basis for correct measurement.

4. Maintenance of measuring instrument

Maintenance and recalibration should be carried out regularly. Do not use if broken.

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Points to be observed when measuring

1. Fit the measuring instrument to the part to be measured at a right angle.

Achieve a right angle by pressing the measuring instrument while moving it against the part to be measured. (For details, refer to individual instructions for measuring instruments.)

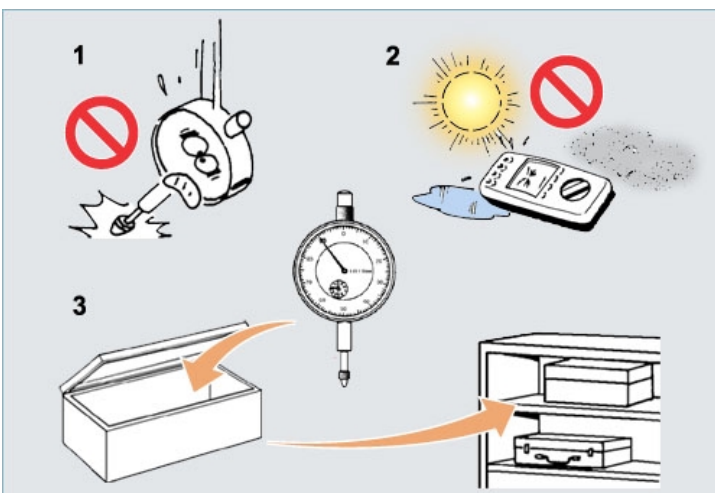
2. Use an appropriate range.

When measuring voltage or current, begin with a high range and adjust downwards. The measurement value should be read from a dial that is suitable for the range.

3. When reading the measurement value

Make sure your eye level is at a right angle to the dial and pointer.

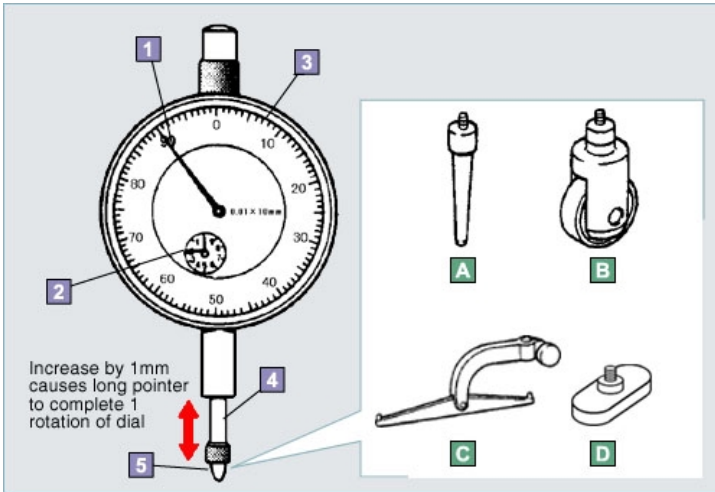
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NOTICE:

- Do not drop or strike, otherwise apply impact. These tools are precision instruments, and may damage the inside parts for construction.
- Avoid using or storing in high temperatures or at high humidity. Errors in measurement values may occur from use at high temperature or humidity. The tool itself may deform if subjected to high temperatures.
- Clean the tool after use, and put it away in its original condition. Put the tool away only after it has been cleaned of oil or waste products. All tools used must be returned in their original condition, and any equipment with a dedicated case must be put away in its case. Measuring tools must be stored in a defined place. If tools are to be stored for a long term, apply rust protection oil where necessary, and remove batteries.

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Dial Gauge

Application

The up- down movement of the suspended measuring tip is converted into revolutions of long and short pointers. Used for measuring deviation or bends in shafts, and surface oscillation of flanges, etc.

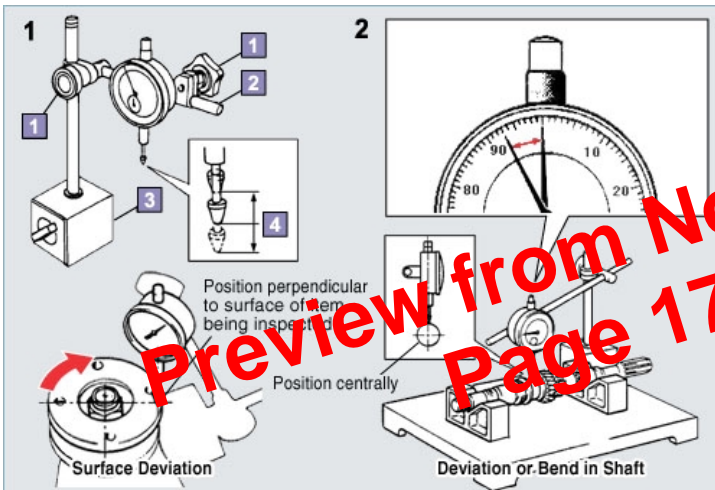
Types of suspended measuring tip

- A Long type:** used to measure parts in a confined space
- B Roller type:** used to measure convex / concave patterns of tires etc.
- C Seesaw type:** used to measure parts that the pendulum cannot touch directly (vertical deviation of companion flanges)
- D Flat plate type:** used for measuring piston protrusion, etc.

Measuring precision: 0.01mm

- 1** Long pointer (0.01mm / dial increment)
- 2** Short pointer (1mm / dial increment)
- 3** Dial face (Rotate to set indication to zero)
- 4** Spindle
- 5** Suspended measuring tip

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Instructions

1. Measuring

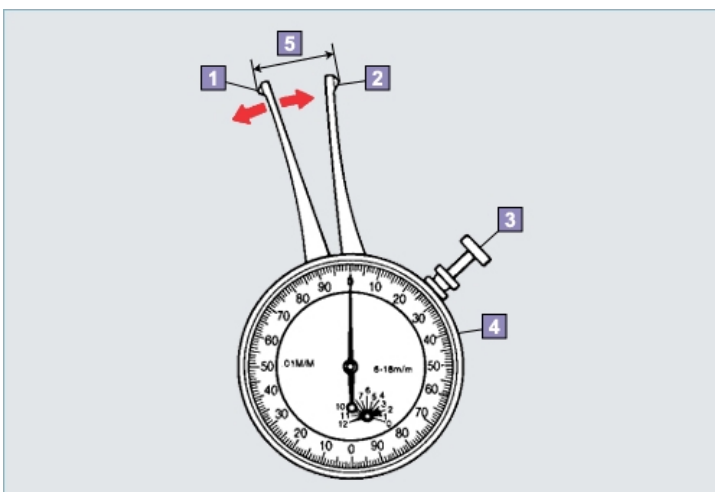
- (1) Always use positioned on a magnetic stand. Adjust the dial gauge position and the item being measured, and set the pendulum so that it is at the center of its range of movement.
- (2) Rotate the item being measured, and read the deviation of the pointers.

2. Reading measurement value

The dial shows a movement of 7 increments. Deviation range: 0.07mm

- 1** Stopper screw
- 2** Arm
- 3** Magnetic stand
- 4** Center of range

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Caliper Gauge

Application

A type of dial gauge used to measure the inside diameter. With the type shown in the diagram on the left, the long pointer rotates once as the moveable lug moves 2mm.

Measuring precision: 0.01mm
(Gauge reading: 20 graduations = 0.2mm)

- 1** Moveable lug
- 2** Fixed lug
- 3** Movement button (opens and closes the moveable lug)
- 4** Indicator dial (rotate to indicate zero)
- 5** Inside diameter

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