

Please read through this owners manual carefully before using your new tool. Use your tool properly and only for its intended use.



Cylinder Bore Gage Manual

- Range: .7" to 1.5"
- Grad: 0.0005"
- Accuracy

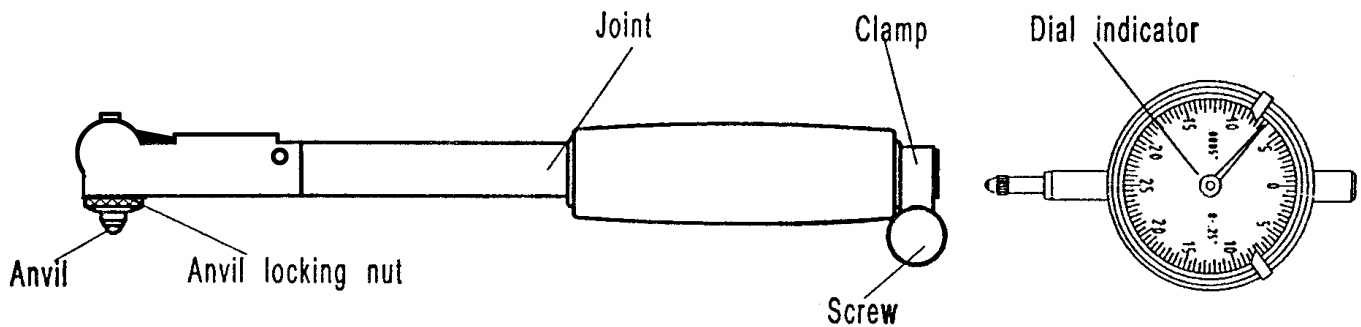
| | | |
|-------------|---------------|----------------------|
| Total error | Repeatability | Self-centering error |
| 0.0009" | 0.0004" | 0.00025" |

- Accessory specifications

| Range | Anvil Quantity | Anvil Range | | | | | | | |
|------------|----------------|-------------|------|------|------|------|------|------|------|
| | | No.1 | No.2 | No.3 | No.4 | No.5 | No.6 | No.7 | No.8 |
| .7" - 1.5" | 8 | .7" | .8" | .9" | 1.0" | 1.1" | 1.2" | 1.3" | 1.4" |

*No.1 anvil is already installed in the measuring head.

- Name and construction of the parts



Insert the dial indicator's stem into the bore gage handle and tighten the clamp. The dial gage must be inserted deep enough to "preload" or move the needle about 1 revolution (0.050").

Choose the proper anvil length to match the bore size to be measured.

Using a separate, outside micrometer (Ring gages or gage blocks could be used as substitutes) open the jaws of the micrometer to the desired diameter of the bore. Lock the setting on the micrometer if a lock is available.

Place the cylinder bore gage's contacts between the jaws of the micrometer, rock the gage to find the lowest reading and rotate the dial indicator's bezel so the needle points to zero. Lock the bezel in this position.

Place the bore gage into the cylinder to be measured and gently rock the gage to find the lowest reading. The dial indicator reading shows the difference between the cylinder's diameter and the dimension the bore gage was previously set to.

Note: To get the most accurate representation of the bore diameter, measurements should be taken at several positions.





CYLINDER BORE GAGE MANUAL

- Range: 2-6"
- Grad: 0.0005"
- Accuracy

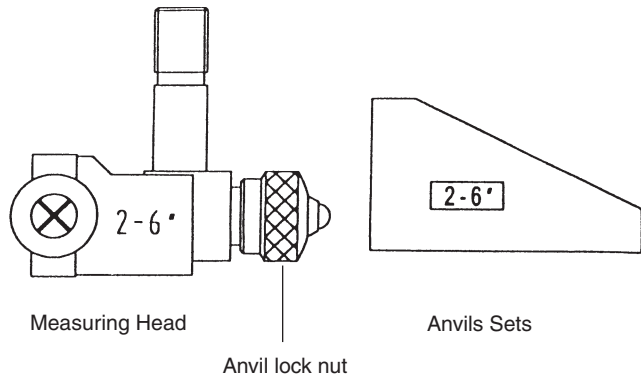
| | | |
|-------------|---------------|----------------------|
| Total error | Repeatability | Self-centering error |
| 0.0009" | 0.0004" | 0.00025" |

• Accessory specifications

| Range | Anvil Quantity | Anvil Range | | | | | | | | | | | Sub-anvil | | Washer Quantity | Washer size | | |
|-------|----------------|-------------|------|------|------|------|------|------|------|------|-------|-------|-----------|------|-----------------|-------------|-------|------|
| | | No.1 | No.2 | No.3 | No.4 | No.5 | No.6 | No.7 | No.8 | No.9 | No.10 | No.11 | Quantity | Size | | No.1 | No.2 | No.3 |
| 2-6" | 11 | 2.0" | 2.2" | 2.4" | 2.6" | 2.8" | 3.0" | 3.2" | 3.4" | 3.6" | 3.8" | 4.0" | 1 | 2" | 3 | 0.02" | 0.05" | 0.1" |

*No. 1 anvil is already installed in the measuring head.

• Method of use



1. Attaching the indicator

- Insert the indicator spindle into the stem.
- The hand of the indicator should travel about 1 revolution (0.05").
- Lock the indicator with the clamp screw.

2. Selecting the accessory or combination of accessories

- Remove the anvil locking nut and the anvils or washers not used.
- Install the correct accessory or combination of accessories.
- Install the knurled locking nut tightly.

3. Dimension setting

- Set an outside micrometer to the exact dimension to be measured. Ring gages or gage blocks may also be used.
- Place the cylinder bore gage's measuring contacts between the micrometer faces and adjust the measuring contacts to position the long hand of the dial indicator at the Max. travel; tighten the locking nut. Turn the indicator's bezel to make the hand point exactly to zero.

4. Measuring and reading methods

- Place the gage in the cylinder and gently rock it to get the lowest dial reading. In order to get the exact measurements, one must generally measure several positions.



Cylinder Bore Gage Manual

Part Number: 52-646-400

- Range: 1.4-6" (Combination of 1.4-2.4" and 2-6")
- Grad: 0.0005"
- Accuracy

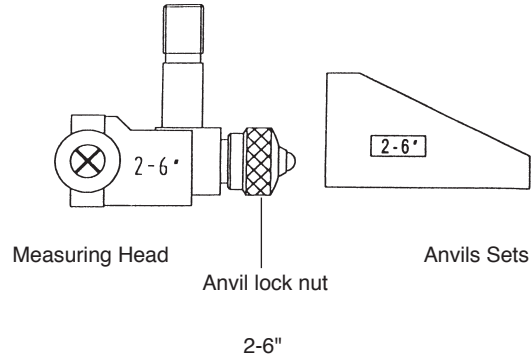
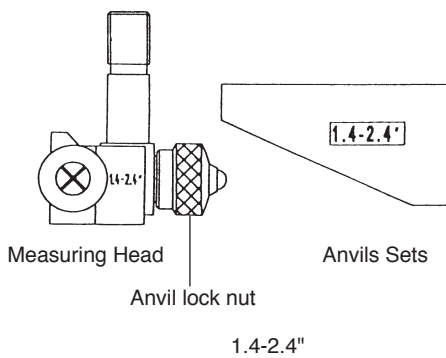
| | | |
|-------------|---------------|----------------------|
| Total error | Repeatability | Self-centering error |
| 0.0009" | 0.0004" | 0.00025" |

• Accessory specifications

| Range | Anvil Quantity | Anvil Range | | | | | | | | | | | Sub-anvil | | Washer Quantity | Washer size | | | |
|----------|----------------|-------------|------|------|------|------|------|------|------|------|-------|-------|-----------|------|-----------------|-------------|-------|-------|------|
| | | No.1 | No.2 | No.3 | No.4 | No.5 | No.6 | No.7 | No.8 | No.9 | No.10 | No.11 | Quantity | Size | | No.1 | No.2 | No.3 | |
| 1.4-2.4" | 4 | 1.4" | 1.6" | 1.8" | 2.0" | | | | | | | | | | | 3 | 0.02" | 0.05" | 0.1" |
| 2-6" | 11 | 2.0" | 2.2" | 2.4" | 2.6" | 2.8" | 3.0" | 3.2" | 3.4" | 3.6" | 3.8" | 4.0" | 1 | 2" | | | | | |

*No. 1 anvil is already installed in the measuring head.

• Method of use



1. Selecting range using

- When range equals 1.4-2.4", use the 1.4-2.4" measuring head & anvils sets; and when range equals 2-6", use the 2-6" measuring head & anvils sets. (See the above figure)

2. Attaching the indicator

- Insert the indicator spindle into the stem.
- The hand of the indicator should travel about 1 revolution (0.05").
- Lock the indicator with the clamp screw.

3. Selecting the accessory or combination of accessories

- Remove the anvil locking nut and the anvils or washers not used.
- Install the correct accessory or combination of accessories.
- Install the knurled locking nut tightly.

4. Dimension setting

- Set an outside micrometer to the exact dimension to be measured. Ring gages or gage blocks may also be used.
- Place the cylinder bore gage's measuring contacts between the micrometer faces and adjust the measuring contacts to position the long hand of the dial indicator at the reversal point (Min.); tighten the locking nut. Turn the indicator's bezel to make the hand point exactly to zero.

5. Measuring and reading methods

- Place the gage in the cylinder and gently rock it to get the lowest dial reading. In order to get the exact measurements, one must generally measure several positions.