Instruction Manual
Analog Internal Micrometer

MICROTEST
SWISS MADE



Your partner for precision measuring instruments

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Introduction

The MICROTEST internal micrometer is a high-precision instrument for measuring internal diameters.

Its unique measuring system and construction enable stable, temperature-compensated results independent of the operator.

Contents of Delivery

- Internal micrometer
- Flat-head screwdriver
- Test certificate
- Instruction manual
- Setting ring (optional)
- Extension (optional)
- Allen key (only with extension)
- Open-end wrenches (only with extension)
- Tripod (optional)



Safety instructions

The internal micrometer must:

- not be opened (voids warranty)
- not be left unattended inside a machine
- not be dropped
- not be left standing in a warm workpiece (material shrinkage risk)
- not be forced out of a bore if stuck - loosen by gently moving while turning back
- be cleaned with a cloth if dirty

Overview of the micrometer



1. Handwheel
2. Scale drum
3. Vernier ring
4. Shaft
5. Millimeter scale
6. Carbide pin
7. Measuring probes
8. Measuring head

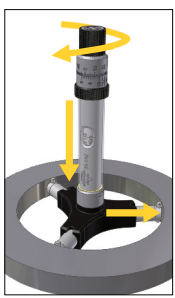
Measuring

1. Insert the micrometer into the bore.
2. Screw out the measuring probes until they rest against the bore wall.
3. Fully center the micrometer using slight vibrations.
4. Ratchet firmly.

Devices up to ø 400 mm: ratchet **6x**
Devices ø 400-1150 mm: ratchet **8x**

Please note:

- Measure in the same configuration as during calibration. For internal step measurements, adjust at the shoulder.
- For precise results, calibrate and adjust the micrometer in the setting ring.
- To detect polygonal shapes, take two measurements offset by 60°



Reading

Always read at the measuring stop
- do not turn back

1. Read the millimeter value on the millimeter scale (Fig. 1).
2. Read the number on the scale drum that lies directly in front of the zero line of the vernier ring (Fig. 2).
3. Find the line on the vernier scale that aligns best with a line on the millimeter scale (Fig.2)
4. Add the values:

   mm scale + scale drum + vernier
   = measurement result



Fig. 1



Fig. 2

Adjusting / Calibrating

1. Ensure that the setting ring and micrometer have the same temperature.
2. Bring the micrometer to the measuring stop in the setting ring or reference gauge. (See page 5)
3. Loosen the vernier screw and set the vernier scale to the exact nominal value. (Fig. 3).
4. Consider the measurement error according to the test certificate and any deviation of the setting ring.
5. Fix the vernier ring with the screw and ensure it does not rub against the scale drum (Fig. 4).



Fig. 3



Fig. 4

Extension Assembly

1. Carefully set the instrument to the smallest measuring size.
2. Remove the hex screw of the scale drum with the allen key (Fig. 5).
3. Slightly loosen the flat-head screw on the vernier ring - do not remove (Fig. 6).
4. Unscrew the shaft from the measuring head using the open-end wrenches.
5. Screw the shaft onto the extension and set the millimeter scale approx. 3 mm above the smallest measuring size.
6. Screw the measuring head onto the extension. Tighten the connections using the open-end wrench (Fig. 7).
7. Bring the instrument into measuring contact in the setting ring.
8. Pull up and turn the scale drum until the millimeter scale matches the setting ring size.
9. Reinstall the hex screw. (Fig. 8).
10. Calibrate / adjust the extended micrometer (see page 6).

Extension (Figures)



Fig. 5



Fig. 6

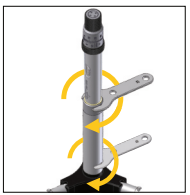


Fig. 7



Fig. 8

Extension - Video Tutorial

Scan the QR code to watch the video tutorial.

www.microtest.ch/en/howto

Tripod (Mounting)

To avoid scratching the workpiece and to improve centering, we recommend mounting a tripod when using an extended internal micrometer.

1. Remove the 3 Allen screws and open the tripod (Fig. 9).
2. Attach the tripod to the micrometer and align the pull cable toward the handwheel. (Fig. 10)
3. Position the tripod at the desired location and tighten the 3 screws.

Tripod (Usage)

1. Pull the cable toward the handwheel and insert the micrometer into the bore.
2. Release the cable once the tripod is inside the bore.
3. Move the measuring head into the desired position.

*Locking screw - optionally used to fix the diameter (Fig. 11)

Tripod (Figures)

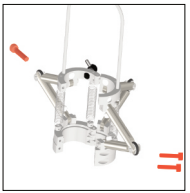


Fig. 9



Fig. 10

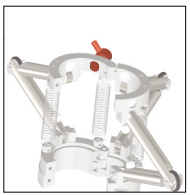


Fig. 11



A: On the measuring head to avoid scratches.
B: Every 2 m for better guidance.
C: On the shaft to improve centering.

Thank you for purchasing our analog internal micrometer!

For general information,
scan the QR code to visit our website.

If you have specific questions or feedback,
feel free to contact us directly.

Microtest AG

+41 (0) 44 723 12 76

info@microtest.ch

www.microtest.ch