

Outside Micrometer Calibration Procedure

Memorial University Technical Services

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1.0 Standards and Equipment

The following equipment is required:

Master Gauge Block Set

NOTE: Standards and equipment used must have a valid calibration certificate

2.0 Calibration Procedure

"TS-0071 Outside Micrometer Calibration Record Sheet" must be used.

Clean the Outside Micrometer's measuring surfaces and the gauge blocks to be used.

- NOTE: 1. Digital Outside Micrometers only need one scale to be verified.*
- 2. Zero the Outside Micrometer at the start and adjust as required by the manufacturers' specifications. If you cannot zero it then use a gauge block and adjust the micrometer to that value.*
 - 3. When testing the Outside Micrometer, one of the points must be near the lower limit that the instrument can measure, another somewhere in the middle, and the third near the upper limit.*
 - 4. Use a conversion factor of 25.40 mm/in to convert gauge block lengths to Metric from Imperial.*

Step 1:

Measure the ambient temperature and record it. If the temperature is <18°C or >24°C, see the Division Manager for further instructions.

Step 2:

Test Characteristic: Anvils and Thimble

Test Method: Visual, Touch

Acceptable Limit: No damage, nicks, or burrs. Should have straight and parallel faces with no free play over the whole length

Step 3:

Test Characteristic: Ratchet

Test Method: Turn the ratchet with the instrument locked, to insure if it is functional

Acceptable Limit: Good working order

Step 4:

Test Characteristic: Measuring Scale

Test Method: Using gauge blocks and the smallest anvil, measure and record 5 different lengths. For micrometers with more than one anvil, make a separate measurement with each anvil

Acceptable Limit: +/- 0.0002" or 0.005 mm

Step 5:

Test Characteristic: Rod Inserts

Test Method: For micrometers with a large measuring range, and different rod inserts, make one measurement for each rod individually.

Acceptable Limit: +/- 0.0002" or 0.005mm