

# Inside Micrometer Calibration Procedure

Memorial University Technical Services

Document No.: TS-0052

Revision: 3

## 1.0 Standards and Equipment

The following equipment is required:

Master Gauge Block Set

Calibrated Outside Micrometer of Similar Range

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

## 2.0 Calibration Procedure

*“TS-0074 Inside Micrometer Calibration Record Sheet” must be used*

*Clean the Inside Micrometer’s measuring surfaces and the gauge blocks to be used*

- NOTE:*
- 1. Digital Inside Micrometers only need one scale to be verified*
  - 2. Zero the Inside Micrometer at the start and adjust as required by the manufacturers’ specifications. If you cannot zero it then mark it as a fail*
  - 3. When testing the Inside 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: Inspect the anvils and the thimble

Test Method: Visual, Touch

Acceptable Limit: No damage, nicks, or burrs. Smooth movement/rotation over the whole range

Step 3:

Test Characteristic: Measuring Scale

Test Method: Use the shortest attachment/rod possible for the instrument. Then take a calibrated outside micrometer and measure the gauge blocks of appropriate length, lock the outside micrometer at that length then measure between the outside micrometer anvils using the inside micrometer, measure and record for 5 different lengths

Acceptable Limit: +/- 0.001" or 0.025 mm

Step 4:

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: +/- 0.001" or 0.025 mm