



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

MOTOR CITY CALIBRATION, INC.
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CALIBRATION

Valid To: February 29, 2020

Certificate Number: 3253.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Dimensional

| Parameter/Equipment | Range | CMC ^{2,4} (\pm) | Comments |
|----------------------------------|----------------------------------|---|---|
| Adjustable Column Height Gages – | Up to 24 in | $(32 + 0.8L) \mu\text{in}$ | Gage blocks, electronic amplifier and probe |
| Air Gages ³ | Up to 0.003 in | 14 μin | Comparison with standard magnification kit |
| Angle Plates | (1 to 40) in | $(21 + 7L) \mu\text{in}$ | Master square |
| Bench Mic / ULM ³ | (0.1 to 80) in | $(2.8 + 3.7L) \mu\text{in}$ | Gage blocks |
| Bore Gages ³ | 0.0001 in res. 0.0005 in res. | 70 μin 290 μin | ID/OD comparator adjustable height gage |
| Calipers ³ | (4 to 120) in | $(280 + 5.6L) \mu\text{in}$ | Gage block, ring gage |

| Parameter/Equipment | Range | CMC ^{2,4} (\pm) | Comments |
|--|---|---|--|
| Electronic Amplifier and Probes ³ | 0.000001 in res. 0.00001 in res. 0.0005 in res. 0.01 in res. | 5.4 μ in 6.5 μ in 290 μ in 580 μ in | Gage blocks |
| End Standards | (1 to 12) in (13 to 80) in | (16 + 6.5L) μ in (13 + 7.4L) μ in | Gage blocks, electronic amplifier and probe Gage blocks and digital indicator |
| Hole Gages | (0.25 to 10) in | (10 + 9.7L) μ in | Ring gages |
| Indicators ³ | 0.00001 in res. 0.0001 in res. 0.0005 in 0.001 in | 6.7 μ in 59 μ in 290 μ in 580 μ in | ULM, gage blocks, adjustable height gage ULM, indicator calibrator |
| Levels | Up to 45° | 2.7 arc sec | Dividing head |
| Micro Hites ³ and Height Gages ³ | Up to 48 in | (35 + 1.4L) μ in | Gage blocks |
| Micrometers ³ | Up to 72 in | (12.1 + 17L) μ in | Gage blocks |
| Parallels | Up to 48 in | (26 + 6.3L) μ in | Surface plate, electronic amplifier and probe |
| Pin & Plug Gages ³ | (0.05 to 10) in | (5 + 8L) μ in | ID/OD comparator |
| Ring Gages | (0.25 to 12) in | (6.7 + 7L) μ in | ID/OD comparator and gage blocks |
| Snap Gages | Up to 20 in | (36 + 20L) μ in | Electronic amplifier and probe |

| Parameter/Equipment | Range | CMC ^{2,4} (±) | Comments |
|---|--|--------------------------------------|---|
| Squares (Squareness) | Up to 40 in | 57 μin | Master square, surface plate and indicator |
| Surface Roughness ³ – Standards, ISO Type C Instrument Amplification | 20 μin Ra 120 μin Ra 20 μin Ra 120 μin Ra | 4 μin 4 μin 2 μin 2 μin | Comparison to reference standard |
| V-Blocks | Up to 6 in | (69 + 10L) μin | Surface plate, reference cylinder and indicator |

¹ This laboratory offers commercial calibration and field calibration services.

² Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

⁴ In the statement of CMC, L is the numerical value of the nominal length of the device measured in inches.



Accredited Laboratory

A2LA has accredited

MOTOR CITY CALIBRATION, INC.

Warren, MI

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).



Presented this 18th day of April 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 3253.01
Valid to February 29, 2020

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.