



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017  
& ANSI/NCSL Z540-1-1994

MASTER GAGE & TOOL CO.  
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CALIBRATION

Valid To: February 28, 2023

Certificate Number: 2200.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1</sup>:

I. Dimensional

Parameter/Equipment	Range	CMC <sup>2,3</sup> (±)	Comments
Calipers	Up to 60 in	$(14 + 7.3L + 0.6R) \mu\text{in}$	Gage blocks, ring gages and pins; IT 1002
Caliper and Depth Micrometer Masters	(0.001 to 6) in	$(88 + 2.2L) \mu\text{in}$	Gage blocks, amp & probe; IT 1035
Gage Blocks	Up to 4 in (> 4 to 13) in	$(3 + 1.5L) \mu\text{in}$ $(5 + 0.8L) \mu\text{in}$	Master gage blocks & P&W Universal Labmaster <sup>TM</sup> ; IT 1060

Parameter/Equipment	Range	CMC <sup>2,3</sup> (±)	Comments
Cylindrical Gages – Plug: Outside Diameter – Up to XXX Ring: Inside Diameter – Up to XX XXX	(0.001 to 9) in (> 9 to 13) in  (0.04 to 14) in (0.04 to 14) in	(6.4 + 3.5D) μin (8.4 + 0.6D) μin  (14 + 1.5D) μin (8.5 + 0.6D) μin	Gage blocks and P&W Universal Labmaster™; IT 1003  Class XXX Master rings or gage blocks and P&W Universal Labmaster™; IT 1021
Height Gages	Up to 60 in	(54 + 6.7L + 0.6R) μin	Gage blocks; IT 1010
Indicators	Up to 4 in	(4 + 17L + 0.6R) μin	Indicator stand and grade 2 gage blocks IT 1007
Length Standards	(0.001 to 6) in  (> 6 to 34) in	(20 + 2.1L) μin  (42 + 8L) μin	Gage blocks with P&W Universal Labmaster™; IT 1012  Gage blocks with amp and probe; IT 1012
Levels – Level Vial Setting	(2 to 24) in	130 μin	Surface plate and gage blocks; IT 1013
Micrometers –  Outside Depth Inside Bore/Holematic	Up to 24 in Up to 12 in Up to 12 in Up to 9 in	(20 + 7L + 0.6R) μin (31 + 5.8L + 0.6R) μin (33 + 6.4D + 0.6R) μin (48 + 4.2D + 0.6R) μin	Gage blocks and spheres;  IT 1017 IT 1006 IT 1011 IT 1011

Parameter/Equipment	Range	CMC <sup>2,3</sup> (±)	Comments
Pin Gages and Sets	(0.001 to 2) in	(26 + 2.4D) μin	Laser micrometer and master plugs or gage blocks and bench micrometer; IT 1020
Plain Taper Gages –  Outside Diameter – Minimum  Truncations – Length Steps	(0.05 to 6) in  (0.2 to 3) in	(30 + 4.1D) μin  (50 + 1.3L) μin	Gage blocks, pins, master plugs, bench micrometer  IT 1031
Protractor –  Digital	(0 to 90)°	0.05° + 0.6R	Gage blocks and sine bar; IT 1022
Spheres –  Diameter and Sphericity	(0.04 to 2) in	(46 + 4D) μin	Gage blocks and bench micrometer; IT 1036
Snap Gages – Plain Anvils Fixed or Adjustable Outside Diameter	(0.01 to 12) in	(40 + 5L) μin	Gage blocks and pins; IT 1057
Straight Thread Gages –  Plugs –  Simple Pitch Diameter  Major Diameter  Adjustable Rings Minor Diameter – Functional	(0.04 to 3) in (> 3 to 9) in  (0.04 to 9) in  (0.04 to 3) in	(64 + 6.7D) μin (57 + 9D) μin  (56 + 4.5D) μin  (210 + 27D) μin	Thread wires, gage blocks & bench micrometer - IT 1033  Thread setting plug, pin gages, height stand; IT 1034

Parameter/Equipment	Range	CMC <sup>2,3</sup> (±)	Comments
Taper Thread Gages – Plugs			
Outside Diameter	(0.05 to 3) in	(46 + 9.5L) μin	Micrometer, bench micrometer; IT 1037
Length of Step and Size of Gage Plane	(3 to 10) in	(56 + 6.1L) μin	
Thread Wires	All Pitches, Inch & Metric	10 μin	P&W Universal Labmaster™, IT 1064
Bench Micrometers –			
Linearity	Up to 1 in	(25 + 0.6R) μin	Gage blocks, force gage, IT 1005
Force	Up to 40 oz	0.2 % of reading	
Feeler Gages	Up to 0.2 in	48 μin	Bench micrometer; IT 1008
Laser Bench Micrometer	Up to 2 in	(14 + 6.4D + 0.6R) μin	Gage pins; IT 1067

## II. Mechanical

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Torque –			
Wrenches	Up to 600 ft·lbf Up to 3000 in·lbf	0.36 % of reading 0.30 % of reading	Torque calibrator; IT 1063
Handles/Screwdriver	Up to 120 in·lbf	0.58 % of reading	

<sup>1</sup> This laboratory offers commercial calibration service and dimensional/calibration services.

<sup>2</sup> 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 of 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.

<sup>3</sup> In the statement of CMC,  $L$  is the numerical value of the nominal length of the device measured in inches, or in mm for metric units;  $R$  is the resolution of the device under test in micro inches, or in micrometer for metric units;  $D$  is the numerical value of the nominal diameter of the device measured in inches.





## *Accredited Laboratory*

A2LA has accredited

**MASTER GAGE & TOOL CO.**

*Greenville, SC*

for technical competence in the field of

**Calibration**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and 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 5<sup>th</sup> day of January 2021.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 2200.02  
Valid to February 28, 2023

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