



# Accredited Laboratory

A2LA has accredited

## LEADER CORPORATION

*Shelby Township, MI*

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 15<sup>th</sup> day of September 2023.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 3692.01  
Valid to June 30, 2025

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



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

LEADER CORPORATION  
51644 Filomena Dr.  
Shelby Township, MI 48315  
Brenda Arcari Phone: 586 566 7114

CALIBRATION

Valid To: June 30, 2025

Certificate Number: 3692.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1, 6</sup>:

I. Dimensional

Parameter/Equipment	Range	CMC <sup>2, 3</sup> (±)	Comments <sup>4</sup>	
External Straight Thread Plug Gages –				
	Pitch Diameter	(0.05 to 4) in	(63 + 1.1 <i>D</i> ) μin	Universal Measuring Machine (ULM/UMM), gage blocks, thread wire
		(4 to 16) in	(61 + 2 <i>D</i> ) μin	Bench comparator with indicator, gage blocks, thread wire
	Major Diameter	Up to 4 in	(38 + 1.2 <i>D</i> ) μin	ULM/UMM, gage blocks
	(4 to 16) in	(22 + 3.7 <i>D</i> ) μin	ULM/UMM	
Thread Plug Gages and Thread Ring Gages –				
	Flank Angle	Up to 90°	2.4′	Optical comparator
	Thread Lead	Up to 1 in	(240 + 25 <i>L</i> ) μin	

Parameter/Equipment	Range	CMC <sup>2,3</sup> ( $\pm$ )	Comments
External Taper Thread Plug Gages –			
Pitch Diameter	(0.062 to 8) in	$(140 + 1.0D) \mu\text{in}$	Bench comparator with indicator, gage blocks, thread wire, sine block
Major Diameter	Up to 8 in	$(55 + 0.8D) \mu\text{in}$	Bench comparator with indicator, gage blocks, sine block
Internal Straight Thread –			
Pitch Diameter (0.5 to 80 TPI)	Up to 16 in	$(190 + 1.3D) \mu\text{in}$	Master plug gage
Minor Diameter	(0.1 to 1) in (1 to 16) in	$(130 + 4.1D) \mu\text{in}$ $(85 + 15D) \mu\text{in}$	Gage pins, gage blocks
Internal Taper Thread Ring Gages –			
Pitch Diameter	Up to 8 in	$(100 + 2.9D) \mu\text{in}$	Tapered master gage plug set, height gage
Minor Diameter	(0.05 to 8) in	$(100 + 1.4D) \mu\text{in}$	Tapered master plug
External Taper Plug –			
Major Diameter	(0.05 to 8) in	$(120 + 2.3D) \mu\text{in}$	Bench comparator with indicator, gage blocks, taper sine block
Step Length	(0.05 to 4) in	$(210 + 1.0L) \mu\text{in}$	Height gage
Internal Taper Ring –			
Minor Diameter	(0.05 to 8) in	$(100 + 0.94D) \mu\text{in}$	Master taper plug
Step Length	(0.05 to 4) in	$(210 + 1.0L) \mu\text{in}$	Height gage



Parameter/Equipment	Range	CMC <sup>2, 3, 7</sup> ( $\pm$ )	Comments <sup>4</sup>
Cylindrical External Plug Gages –  Diameter	(0.01 to 16) in  (0.01 to 8) in	(18 + 8.8D) $\mu$ in  (19 + 2.8D) $\mu$ in	Bench comparator with indicator, gage blocks  ULM/UMM
Cylindrical Ring Gages –  Diameter	(0.1 to 8) in	(12 + 4D) $\mu$ in	Comparison using master rings, comparison equipment, ULM/UMM
Dimension Over Roll – Measure	Up to 8 in	(120 + 0.7L) $\mu$ in	Roll gage, gage blocks, pins
Spline Gage Plug	(0.05 to 16) in  (0.05 to 9) in	(46 + 3.5D) $\mu$ in  (52 + 3.5D) $\mu$ in	Bench comparator with indicator, gage blocks, gear measuring wires, ULM/UMM
Spline Gage Ring – MBW	(0.2 to 16) in	(150 + 11D) $\mu$ in	Gage blocks, gage measuring wires
Involute – Measure  Profile  Index  Lead  Runout	(0.2 to 6) in  (0.2 to 6) in  (0.2 to 6) in  (0.2 to 6) in	120 $\mu$ in  99 $\mu$ in  97 $\mu$ in  130 $\mu$ in	Gear Inspection System

## II. Dimensional Testing/Calibration<sup>1</sup>

Parameter/Equipment	Range	CMC <sup>2, 3, 7</sup> ( $\pm$ )	Comments
Length <sup>5</sup> – 1D – Measure 3D – Measure	Up to 14 in	$(210 + 1.1L) \mu\text{in}$	Height gage
Linear	Up to (14 x 16 x 12) in	$(280 + 29L) \mu\text{in}$	CMM
Volumetric	Up to (14 x 16 x 12) in	450 $\mu\text{in}$	
Length <sup>5</sup> – Measure	Up to 14 in	$(10 + 5.8L) \mu\text{in}$	ULM/UMM

<sup>1</sup> This laboratory offers commercial calibration service, dimensional testing service and field calibration service.

<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 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.

<sup>3</sup> In the statement of CMC,  $D$  is the diameter in inches and  $L$  is the length in inches.

<sup>4</sup> "Supermicrometer" is a registered trademark with a last listed owner of Pratt & Whitney Measurement Systems, Inc., Connecticut U.S.A.

<sup>5</sup> This laboratory meets R205 – *Specific Requirements: Calibration Laboratory Accreditation Program* for the types of dimensional tests listed above and is considered equivalent to that of a calibration.

<sup>6</sup> This scope meets A2LA's P112 *Flexible Scope Policy*.

<sup>7</sup> The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.