



The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

GLEASON - M&M PRECISION SYSTEMS CALIBRATION LABORATORY

Dayton, OH

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 any additional program requirements in the field of calibration. 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 8 January 2009*).

Presented this 4th day of February 2010.



A handwritten signature in black ink, appearing to read "Peter Meyer", written over a horizontal line.

President & CEO
For the Accreditation Council
Certificate Number 2054.01
Valid to October 31, 2011

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

GLEASON-M&M PRECISION SYSTEMS CALIBRATION LABORATORY

300 Progress Road
Dayton, OH 45449
Edward Lawson Phone: 937 384 8951

CALIBRATION

Valid To: October 31, 2011

Certificate Number: 2054.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations and dimensional testing¹:

I. Dimensional

Parameter/Equipment	Range	CMC ² (±)	Comments
Composite Verification of Analytical Gear and Spline Measurement Systems for Slope Deviation of –			
Involute Curve ³	Limited to direct comparator method	1.4 µm	Following AGMA 931-A02 and AGMA 915-1-A02
Helix ³		1.0 µm	

II. Dimensional Calibration & Dimensional Testing

Parameter/Equipment	Range	CMC ² (±)	Comments
Outside Diameter –			
Plain Cylinders and Gear/Spline	Up to 125 mm	1.5 µm	SIP 550M



Parameter/Equipment	Range	CMC ² (±)	Comments
Inside Diameter – Plain Rings and Gear/Spline	(20 to 125) mm	1.7 µm	SIP 550M or gage pins & blocks
Dimension Over Pins (DOP) – External Gear/Spline	Up to 125 mm	1.9 µm	SIP 550M with gage pins and gage blocks
Dimension Between Pins (DBP) – Internal Gear/Spline with Spur Teeth	(20 to 125) mm	5.6 µm	Gage pins and gage blocks
Involute Curve, Total Deviation – Reference Artifact, Gear, or Spline	Base Diameter: (5 to 356) mm	1.0 µm	M&M model 3515 following AGMA 915- 1-A02
Helix, Total Deviation – Reference Artifact, Gear, or Spline	Helix Angle: 0° to 42° Test Diameter: (5 to 250) mm	1.0 µm	M&M model 3515 following AGMA 915- 1-A02
Eccentricity/ Concentricity – Periphery of Slow Taper and LeCount Arbors	Test Diameter: Up to 125 mm	0.2 µm	M&M model 3515
Pitchline Runout – Reference Artifact, Gear, or Spline	Test Diameter: Up to 250 mm	1.5 µm	M&M model 3515 following AGMA 915- 1-A02

Peter Mlynski

Parameter/Equipment	Range	CMC ² (±)	Comments
Single Pitch – Reference Artifact, Gear, or Spline	Test Diameter: Up to 250 mm	1.3 µm	M&M model 3515 following AGMA 915- 1-A02
Cumulative Pitch – Reference Artifact, Gear, or Spline	Test Diameter: Up to 250 mm	1.4 µm	M&M model 3515 following AGMA 915- 1-A02

¹ This laboratory offers commercial calibration service and field calibration service.

² Calibration and Measurement Capability (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. Calibration and Measurement Capabilities 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.

