



Accredited Laboratory

A2LA has accredited

ALPHAUSA

Livonia, MI

for technical competence in the field of

Mechanical Testing

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 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 11th day of July 2017.

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

President and CEO
For the Accreditation Council
Certificate Number 1215.01
Valid to July 31, 2019

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



SCOPE OF ACCREDITATION TO ISO 17025:2005

ALPHAUSA
33375 Glendale Avenue
Livonia, MI 48150
Joseph Novack Phone: 734 756 8391

MECHANICAL

Valid To: July 31, 2019

Certificate Number: 1215.01

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

<u>Test</u>	<u>Test Methods</u>
Mechanical Testing	
Hardness	
Rockwell, Rockwell Superficial – A, B, C, 15N, 30N, 15T, 30T	ASTM E18
Tensile / Yield / %E	ASTM E8/E8M, F606/F606M; ISO 898-1
DTI Compression Testing	ASTM F959, F959M, F606/F606M
Torque Twist-off Testing	SOP 1212, SOP 4070, SOP 4070-01
Push Out/Pull Out	SOP 1027, SOP 4070, SOP 4070-01
Prevailing Torque	Ford WE955; FCA PF.90284; IFI 545
Torque and Tension	ISO 16047
Torque and Angle	ISO 16047
Coefficient of Friction	ISO 16047
Chemical Testing	
LECO GDS500A Spectrometer (Al, C, Cr, Cu, Mn, Mo, Ni, P, S, Si)	ASTM E415

I. Dimensional Testing¹:

Parameter	Range	CMC ² (±)	Technique / Method
Angle	Up to 360°	0.1°	Optical comparator / MIL-STD-120 (Canceled 1996) ³
	Up to 360°	0.01°	CMM machine / MIL-STD-120 (Canceled 1996) ³

Linear			
- 1D	(0.028 to 1.00) in	0.0016 in	Pin gages / MIL-STD-120 (Canceled 1996) ³
	Up to 1.0000 in	0.0003 in	Ball micrometer / MIL-STD-120 (Canceled 1996) ³
	Up to 3.0000 in	0.0003 in	Flat micrometer / MIL-STD-120 (Canceled 1996) ³
	Up to 1.000 in	0.0008 in	Point micrometer / MIL-STD-120 (Canceled 1996) ³
	Up to 6.000 in	0.0007 in	Caliper / MIL-STD-120 (Canceled 1996) ³
	Up to 1.000 in	0.0004 in	Dial indicator / MIL-STD-120 (Canceled 1996) ³
- 2D	Up to 7.5000 in	0.0005 in	Optical comparator / MIL-STD-120 (Canceled 1996) ³
- 3D	Up to 16.000 in	0.00014 in	CMM machine / MIL-STD-120 (Canceled 1996) ³
Radii	(0.02 to 0.7600) in	0.001 in	Optical comparator / MIL-STD-120 (Canceled 1996) ³
	(0.02 to 0.7600) in	0.00032 in	CMM machine / MIL-STD-120 (Canceled 1996) ³

¹ This laboratory does not offer commercial dimensional testing/calibration services. These tests are not equivalent to that of a calibration.

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 measurements 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 measurement 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 measurement.

³ This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.