CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Torque & Tension Laboratory and Consulting
2675 White Oak Circle
Aurora, IL 60502

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

while demonstrating technical competence in the field(s) of

TESTING

Refer to the accompanying Scope(s) of Accreditation for information regarding the types of tests to which this accreditation applies.

AT-1662

Certificate Number

ANAB Approval

Certificate Valid To: 05/08/2016
Version No. 002 Issued: 05/15/2015

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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 January 2009*).

ANSI-ASQ National Accreditation Board

ANAB

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Torque & Tension Laboratory and Consulting

A subsidiary of Aztech Locknut Company
2675 White Oak Circle, Aurora, IL 60502
Joe Cammarata Phone: (630) 423-4843
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TESTING

Valid to: May 8, 2016 Certificate Number: AT - 1662

I. Mechanical

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Fasteners	Hardness (Rockwell B,C,F, 15N,30N)	ASTM E18, F606 ASME B18.16.1M NASM 1312-6 SAE J417	Rockwell Hardness Tester
Fasteners	Micro-Hardness	ASTM E384, E3 SAE J423	Micro-Hardness Tester
Fasteners	Sample Preparation	ASTM E3	Cut Off Saw, Polishing Table and Mounting
Fasteners	Case Depth	SAE J78, J423	Micro-Hardness Tester and Microscope
Fasteners	Optical Microscopy	ASTM E883	Metallograph
Fasteners	Banding / Orientations in Microstructures	ASTM E1268, A247	Metallograph
Fasteners	Determine Inclusions in Steel	SAE J422	Metallograph
Fasteners	Depth of Decarburization	ASTM E1077 F2328 / F2328M SAE J419	Metallograph

ilac-MRA ANAB

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Fasteners	Surface Discontinuities	ASTM F812, F788	Stereo Scope Metallograph
Fasteners	Proof Load	ASTM F606, F606M ASME B18.16M IFI 100/107 2002 & 2007 SAE J995 ISO 2320	Skidmore - Wilhelm Tester (7 500 to 300 000) lb
Fasteners	Clamp Load	ASTM F606, F606M ASME B18.16M IFI 100/107 SAE J995	Skidmore - Wilhelm Tester Torque Tester (7 500 to 300 000) lb
Fasteners	Prevailing Torque Strength	ASME B18.16M DIN 267 PT 15 IFI 100/107 ISO 2320	Automated Torque Tester Hand Torque Wrenches (0 to 2 200) ft-lb
Fasteners	Torque Tension	IFI 101	Automated Torque Tester Hand Torque Wrenches (0 to 2 200) ft-lb
Fasteners	Torsional Strength	ASME B18.6.3 Sec 4.11.3, DIN 7513 Sec 5.2.2, DIN EN ISO 2702 Sec 6.2.2	Hand Torque Wrenches (0 to 2 200) ft-lb
Fasteners	Hydrogen Embrittlement	SAE USCAR-7	Dial Torque Wrench (0 to 2 200) ft-lb
Fasteners	Plating Thickness/Coverage	ASTM B568, B487	Fischer X-Ray Visual Inspection
Fasteners	Cyclic Vibration	NASM-STD-1312-7	Vibration Tester (¼ to 5/8) in
Fasteners	Magnetic Permeability	ASTM A342 / A342M	Magnetic Permeability Tester 1.01 Mu to 2.5 Mu
Fasteners	Surface Texture	ASME B46.1	Surface Analyzer 0 – 125 Ra or equivalent in other scales.

II. Chemical

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Fasteners	Chemical Analysis of Ferrous Metals	ASTM E 415	Baird Spectrograph
Fasteners	Micro-Etching	ASTM E 407	Nital Etchant

III. Dimensional Inspection / Mesurement

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY (EXPRESSED AS UNCERTAINTY+/-)	REFERENCE STANDARD OR EQUIPMENT	METHODS
Linear	Up to 2 in or 50 mm	0.002 in or 0.05 mm	Dial Micrometer	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Linear	Up to 6 in or 152 mm	0.001 in or 0.03 mm	Dial or Digital Caliper	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Linear	Up to 7 in or 178 mm	0.002 in or 0.05 mm	Optical Comparator	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Linear	Up to 4 in or 100 mm	0.002 in or 0.05 mm	Digital Height Gage	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Linear	Up to 2 in or 50 mm	0.002 in or 0.05 mm	Digital or Dial Indicator	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Linear	Up to 4 in or 100 mm	0.002 in or 0.05 mm	Dial Countersink Gage	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Linear Concentricity	Up to 6 in or 152 mm	0.001 in or 0.03 mm	Optical Comparator	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Angle	(0 to 360) degree	2 degrees	Optical Comparator	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY (EXPRESSED AS UNCERTAINTY+/-)	REFERENCE STANDARD OR EQUIPMENT	METHODS
Angularity of Bearing Surface Full Indicator Movement (FIM)	(0 to 0.5 inch) (0 to 15 mm)	0.002 in or 0.05 mm	Dial Indicator	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Radius	Up to 0.025 in or 6 mm	0.001 in or 0.03 mm	Optical Comparator	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Threads	(¼ - 08) to (1.0-14)	0.0008 in or 0.02 mm	Segmented Ring Gages	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Threads	(4 - 40) UN to (3-12 & 3-4.5) UN M3x0.5 to M33x3.50	0.0008 in or 0.02 mm	Go – No Go Threaded Plug Gages	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications
Threads	0.1336 Z to 1.1600 Z	0.0008 in or 0.02 mm	Go – No Go Cylindrical Plug Gages	Internal procedures based on IFI Standards, Mil-Standard 120 and Customer Specifications

Notes:

1. ** = As Applicable*
2. *Calibration and Measurement Capabilities (Expanded Uncertainties) are based on approximately a 95% confidence interval, using a coverage of k=2.*
3. *This scope is formatted as part of a single document including the Certificate of Accreditation No. AT-1662*

Vice President

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