



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ATF, INC.
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Lincolnwood, IL 60712
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MECHANICAL

Valid To: February 28, 2019

Certificate Number: 1101.01

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> |
|--|---|
| Hardness (Rockwell B, C, 15N) | ASTM A370, E18, F606, F606M; GM 6171M ¹ ; JIS Z2245; SAE J417, J1237 |
| Microhardness (Knoop and Vickers) 500 g | ASTM E384 |
| Tensile (Axial and Wedge) | ASTM F606, F606M; JIS B1051; GM 6170M ¹ , 6171M ¹ |
| Discontinuities | ASTM F788, F788M, F812, F812M; GM 6102M ¹ , 6103M ¹ ; ISO 6157; SAE J122, J123, J1061 |
| Stress Durability (Hydrogen Embrittlement) | SAE USCAR-7; GM 6170M ¹ , 6171M ¹ |
| Decarburization by Hardness | ASTM E1077; DIN/EN 20898-1; GM 6104M ¹ ; JIS B1051; SAE J121, J419 |
| Torsional Strength | ASTM F738M; SAE J1237 |
| Ductility | GM 6170M ¹ , 6171M ¹ ; SAE J81 ¹ , J1237 |
| Salt Spray | ASTM B117 |
| Plating Thickness by Eddy Current Methods | ASTM B499, B530 |
| Torque Drive | SAE J1237, SAE J81 ¹ ; GM 6170M ¹ |
| Surface Roughness | ASME B46.1 |
| Metallographic Evaluation: | |
| Case Depth (By Microhardness or Microscope) | SAE J423 |
| Macroetching | ASTM E340 |
| Grain Flow | SAE/USCAR-8 |

¹ The accredited test methods listed above are used in determining compliance with any material specifications included on this Scope; however, the inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications.

Dimensional Testing³:

| Parameter/Equipment | Range | CMC ^{2,4} (±) | Comments |
|-----------------------------------|--|---|---|
| Thread Acceptability ³ | | | |
| External Threads | M4 to M16 4-40 to ½-20 | (330 + 10L) µin (330 + 10L) µin | Tri-roller |
| External Threads | M2.5 to M16 0-80 to ½ -20 | --- --- | Thread ring gages |
| Internal Threads | M2.5 to M16 2-56 to ½ -20 | --- --- | Go/No Go (plug) |
| Linear ³ – 1D, 2D | (0 to 4) in (0 to 1) in (0 to 6) in (0 to 14) in 0.03 to 1 in | 0.00005 in 0.00005 in 0.0003 in 0.0005 in --- | Outside micrometers Inside micrometers Calipers Optical comparator Plug gages |
| Concentricity ³ | (0 to 1) in | (2000 + 38L) µin | Concentricity gages |
| Angle ³ | (0 to 360)° | | Optical comparators |
| Radii ³ | (0 to 1.6) in | | VMM |
| Recess Penetration ³ | (0 to 1) in | 0.0006 in | Penetration gage (DIAL-1) |
| Recess Size ³ | Torx 6 to Torx 55 Torx +6 to Torx +55 Tamper Resistant T6 to T55 Phillips 0 to #4 Pozi-Drive #1 to #3 | 0.0006 in 0.0006 in 0.0006 in 0.0006 in 0.0006 in | Indicator gage |
| Straightness ³ | (1 to 12) in | (1000 + 22L) µin | Straightness gage |
| 3D Measurement ³ | (10 x 6 x 6) in | X 0.002 in Y 0.002 in Z 0.002 in | Video/Touch probe measurements (VMM) |



² This laboratory does not offer commercial dimensional testing services.

³ These tests are not equivalent to that of a calibration.

⁴ In the statement of CMC, L is the numerical value of the nominal length of the device measured in inches.

A handwritten signature in black ink, appearing to be 'L. L. L.', written in a cursive style.



Accredited Laboratory

A2LA has accredited

ATF, INC.

Lincolnwood, IL

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 10th day of May 2017.

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President and CEO
For the Accreditation Council
Certificate Number 1101.01
Valid to February 28, 2019

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