

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

INGERSOLL RAND COMPANY

4310 Adler Drive Dallas, TX 75211

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CALIBRATION

Valid until: June 30, 2021 Certificate Number: 5243.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Mechanical

| Parameter/Equipment | Range | CMC ^{2, 3} (±) | Comments |
|---------------------------------------|--|-------------------------|--|
| DC Electric Fastening Torque Tools | (2.47 to 13.27) in·lb (0.28 to 1.5) Nm | 1.9 % | Electronic transducer and display unit per IR procedure O.P. 3.2 |
| | (8.85 to 88.5) in·lb (1 to 10) Nm | 1.7 % | |
| | (3.68 to 51.6) ft·lb (5 to 70) Nm | 2 % | |
| | (7.3 to 73.7) ft·lb (10 to 100) Nm | 2 % | |
| | (14.7 to 147.5) ft·lb (20 to 225) Nm | 2.2 % | |
| | (184.39 to 1843.9) ft·lb (250 to 2500) Nm | 3 % | |
| Pneumatic Fastening Torque Tools | (11.5 to 88.5) in·lb (1.3 to 10) Nm | 2.3 % | Electronic transducer and display unit per IR procedure O.P. 3.3 |
| | (5.16 to 11) ft·lb (7 to 15) Nm | 2.6 % | |

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| Parameter/Equipment | Range | CMC ^{2, 3} (±) | Comments |
|--|---|-------------------------|--|
| Pneumatic Fastening Torque Tools (cont) | (14.7 to 29.5) ft·lb (20 to 40) Nm | 2.5 % | Electronic transducer and display unit per IR procedure O.P. 3.3 |
| | (18.43 to 73.7) ft·lb (45 to 90) Nm | 2.6 % | |
| | (73.7 to 200.6) ft·lb (100 to 225) Nm | 2.7 % | |
| Pulse Fastening Torque Tools | (7 to 1132.7) in·lb (0.7 to 15) Nm | 1.3 % | Electronic transducer and display unit per IR procedure O.P. 3.4 |
| | (11 to 29.5) ft·lb (15 to 32) Nm | 2.6 % | |
| | (22 to 40.5) ft·lb (30 to 55) Nm | 2.6 % | |
| | (36.8 to 62.6) ft·lb (50 to 85) Nm | 2.6 % | |
| | (89 to 209) ft·lb (122 to 284) Nm | 2.5 % | |
| Cordless Fastening Torque Tools | (2.74 to 35.4) in·lb (0.31 to 4) Nm | 1.3 % | Electronic transducer and display unit per IR procedure O.P. 3.5 |
| | (0.73 to 13.2) ft·lb (1 to 18) Nm | 2.5 % | |
| | (7.37 to 59) ft·lb (12 to 80) Nm | 1.6 % | |
| | (73 to 405) ft·lb (100 to 550) Nm | 2.6 % | |
| | (147.5 to 1475) ft·lb (200 to 2000) Nm | 2.6 % | |
| | (258.14 to 4794.15) ft·lb (350 to 6500) Nm | 4.5 % | |

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 $^{^{\}rm 1}$ This laboratory offers commercial 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 In the statement of CMC, the value is defined as the percentage of reading.



Accredited Laboratory

A2LA has accredited

INGERSOLL RAND

Dallas, TX

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 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 13th day of June 2019.

Vice President, Accreditation Services For the Accreditation Council Certificate Number 5243.01

Valid to June 30, 2021