PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Third Coast Gage & Calibration

702 County Road 129, Alvin, Texas 77511

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Dimensional and Mechanical Calibration

(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
June 09, 2016	February 22, 2023	February 22, 2025

Accreditation No.:	*Certificate No.:*
81020	L23-143

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Certificate of Accreditation: Supplement

Third Coast Gage & Calibration

702 County Road 129, Alvin, Texas 77511
Contact Name: Layndon Collinsworth Phone: 832-569-2046

Accreditation is granted to the facility to perform the following calibrations:

Dimensional

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
OD Micrometer [F]	0.05 in to 1 in (5 µin res)	(9.73 + 4.67L) µin	Gage Blocks Cal 10.0 Calibration of Micrometers & Setting Standards
	0.05 in to 1 in (50 µin res)	(41.55 + 3.38L) µin	
	0.05 in to 4.5 in (0.000 1 in res)	(42.43 + 22.58L) µin	
	5 in to 12 in (0.000 1 in res)	(25.89 + 14.55L) µin	
	0.05 in to 4.5 in (0.001 in res)	(573.8 + 3.93L) µin	
	5 in to 12 in (0.001 in res)	(563.19 + 3.67L) µin	
ID Micrometer [F]	1 in to 40 in	(571 + 2.75L) µin	Labmaster, Gage Blocks Cal 10.0 Calibration of Micrometers & Setting Standards
Caliper [F]	1 in to 12 in	(563.19 + 3.67L) µin	Gage Blocks, Surface Plate Cal 11.0 Calibration of Calipers
Height Gage [F]	1 in to 30 in	(35.54 + 13.88L) µin	Gage Blocks, Surface Plate Cal 9.0 Calibration of Height & Depth Gages
Gage Blocks [F]	0.05 in	2.3 µin	Labmaster, Gage Blocks Cal 13.0 Calibration of Gage Blocks
	0.1 in to 4 in	(0.4 + 15.7L) µin	Labmaster, Gage Blocks Cal 13.0 Calibration of Gage Blocks
Thread Plugs – Pitch Diameter [F]	0.001 in to 2.5 in	52 µin	Labmaster, Gage Blocks, Force System, Thread Wires Cal 4.0 Calibration of NON API 7-2 or 5B Thread Plug and Ring Gages
Thread Plugs – Major Diameter [F]	0.001 in to 2.5 in	43 µin	Labmaster, Gage Blocks, Force System Cal 4.0 Calibration of NON API 7-2 or 5B Thread Plug and Ring Gages

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API Rotary Shouldered Gage Standoff [F]	0.1 in to 1 in	59 µin	Master Thread Gage, Surface Plate, Height Gage Cal 3.0 Calibration of API Thread Gauges
Ring Gage – Plain [F]	0.1 in to 8 in	(16.71 + 17.78L) µin	Labmaster, Gage Blocks Class X only Cal 8.0 Calibration of Plain Rings
Thread Wires [F]	0.001 in to 0.5 in	(4.17 + 15.46L) µin	Labmaster, Gage Blocks Cal 7.0 Calibration of Thread Thread Wires, Cylindrical Plugs, & Pins
Micrometer Setting Standards [F]	1 in to 12 in	(0.37 + 15.77L) µin	Labmaster, Gage Blocks Cal 10.0 Calibration of Micrometers & Setting Standards

Mechanical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Hydraulic Pressure Gauge [F]	100 psi to 2 999 psi	$(7.957 \times 10^{-2} + 1.738 \times 10^{-4} P)$ psig	Dead-weight tester Cal 20.0 Calibration od Pressure Gauges
	3 000 psi to 40 000 psi	$(4.08 \times 10^{-1} + 5.644 \times 10^{-5} P)$ psig	
Brinell Hardness Tester [F]	3 000 kgf	0.7 kgf	Load Cell Cal 22.0 Calibration of Hardness Testers & Brinnel Scopes
Torque Wrench [F]	20 lbf·ft to 1 000 lbf·ft	$(1.11 + 5.09 \times 10^{-3} T)$ lbf·ft	Nobar 50682.LOG Transducer Cal 21.0 Calibration of Hand Torque Tools

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represents the smallest measurement uncertainty attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is typically expressed at a confidence level of 95 % using a coverage factor *k* (usually equal to 2). The actual measurement uncertainty associated with a specific calibration performed by the laboratory will typically be larger than the CMC for the same calibration since capability and performance of the device being calibrated and the conditions related to the calibration may reasonably be expected to deviate from ideal to some degree.

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Accreditation is granted to the facility to perform the following calibrations:

2. The laboratories range of calibration capability for all disciplines for which they are accredited is the interval from the smallest calibrated standard to the largest calibrated standard used in performing the calibration. The low end of this range must be an attainable value for which the laboratory has or has access to the standard referenced. Verification of an indicated value of zero in the absence of a standard is common practice in the procedure for many calibrations but by its definition it does not constitute calibration of zero capacity.

3. The presence of a superscript F means that the laboratory performs calibration of the indicated parameter at its fixed location. Example: Outside Micrometer^{F} would mean that the laboratory performs this calibration at its fixed location.

4. The term L represents length in inches or millimeters as appropriate to the uncertainty statement.

5. The term P represents pressure in units appropriate to the uncertainty statement.

6. The term T represents torque in units appropriate to the uncertainty statement.