PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Calibration Specialty, Inc.

2500 E. Grauwyler Road, Irving, TX 75061

(Hereinafter called the Organization) and hereby declares that Organization 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
(as outlined by the joint ISO-ILAC-IAF Communiqué dated January 2009):

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:

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
February 27, 2014	February 23, 2016	February 28, 2018

Accreditation No.:	*Certificate No.:*
74313	L16-84

Tracy Szerszen
President/Operations Manager

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

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

Calibration Specialty, Inc.
2500 E. Grauwyler Road. Irving, TX 75061
Contact Name: Brian Kietzer Phone: 972-438-3774

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
Gage Blocks [F]	0.01 in to 0.05 in	2.2 µin	Mahr Federal 130B-24 Gage Block Comparator Master Gage Blocks
	0.05 in to 4 in	(3 + 1.3L) µin	
	4 in to 10 in	(0.89 + 1.9L) µin	Edmunds TOL 2200 Twin Head Gage Block Comparator
	10 in to 20 in	(1.9 + 1.9L) µin	
Pin Gages [F]	123 µin to 1 in	41 µin	P & W Model C Supermicrometer
Ring Gages [F]	0.125 in to 12 in	(12 + 2L) µin	Sheffield N-9 Ring Gage Comparator
Dial Indicators [FO]	114 µin to 1 in	(38 + 0.91L) µin	P & W Model C Supermicrometer
	1 in to 10 in	(74 + 9.2L) µin	Surface Plate and Gage Blocks
Calipers [FO]	0.001 in to 36 in	(410 + 6L) µin	Gage Blocks
Micrometers [FO]	93 µin to 36 in	(31 + 10L) µin	

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
Absolute Pneumatic [FO]	0.2 psia to 50 psia	0.002 6% + 0.000 9 psia	Ruska 2465 A (2465-725 & 2465-799) (2465-729 & 2465-799)
Gage Pneumatic [FO]	0.2 psig to 50 psig	0.002 6% + 0.000 86 psig	
	2 psig to 1 000 psig	0.002 6% + 0.000 83 psig	
Gage, Hydraulic [FO]	6 psig to 2 417 psig	0.006 8% + 0.014 psig	Ruska 2400 A (2400 -736 & 2402) (2400 -735 & 2402)
	30 psig to 12 140 psig	0.005 7 % + 0.033 psig	
Torque Wrench [FO]	4 lbf•in to 50 lbf•in	1.2% + 0.071 lbf•in	CDI 2000-400-02
	30 lbf•in to 400 lbf•in	0.37% + 0.44 lbf•in	
	80 lbf•in to 1 000 lbf•in	0.56% + 0.79 lbf•in	
	20 lbf•ft to 250 lbf•ft	0.47% + 0.28 lbf•ft	
	60 lbf•ft to 600 lbf•ft	0.29% + 0.57 lbf•ft	CDI 2000-12-02
	200 lbf•ft to 2 000 lbf•ft	0.56% + 1.2 lbf•ft	Norbar 50231 .ETS

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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
Torque Wrench (Dial Type)[F]	10 lbf•in to 100 lbf•in	0.39% + 0.26 lbf•in	AKO-TSD-2050 Torque Calibration System
	120 lbf•in to 1 200 lbf•in	0.53% + 0.56 lbf•in	
	200 lbf•ft to 2 000 lbf•ft	0.27% + 0.61 lbf•ft	

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.

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 presence of a superscript FO means that the laboratory performs calibration of the indicated parameter both at its fixed location and onsite at customer locations. Example: Outside Micrometer [FO] would mean that the laboratory performs this calibration at its fixed location and onsite at customer locations.

5. Measurement uncertainties obtained for calibrations performed at customer sites can be expected to be larger than the measurement uncertainties obtained at the laboratories fixed location for similar calibrations. This is due to the effects of transportation of the standards and equipment and upon environmental conditions at the customer site which are typically not controlled as closely as at the laboratories fixed location.

6. The term D represents diameter in inches or millimeters as appropriate to the uncertainty statement.

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

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