



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Quality Control Solutions, Inc.

43339 Business Park Drive, Suite #101, Temecula, CA 92590

(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 Optical 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/Operations Manager

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

<i>Initial Accreditation Date:</i>	<i>Issue Date:</i>	<i>Expiration Date:</i>
March 26, 2007	June 2, 2015	July 31, 2017
<i>Extension Date.:</i>	<i>Accreditation No.:</i>	<i>Certificate No.:</i>
September 30, 2017	59397	L15-187

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

Quality Control Solutions, Inc.

43339 Business Park Drive, Suite #101, Temecula, CA 92590
 Louis Todd Phone: 951-676-1616

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 (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Dial Indicator ^{FO}	Up to 2 in	(79 + 7 L) μ in	Comparison to Gage Blocks, Vision System
Height Gages ^{FO}	Up to 60 in	(562 + 20 L) μ in	
Calipers ^{FO}	Up to 36 in	(340 + 39 L) μ in	
ID Micrometer ^{FO}	1.5 in to 12 in	(98 + 12 L) μ in	
Depth Micrometer ^{FO}	Up to 12 in	(96 + 9 L) μ in	
OD Micrometer ^{FO}	Up to 4 in 4 in to 12 in	(53 + 6 L) μ in (68 + 8 L) μ in	
Laser Micrometer ^{FO}	0.01 in to 1.0 in 0.01 in to 2.0 in	33 μ in 49 μ in	Master Pins
Plain Plug Gages ^{FO}	0.01 in to 2 in	(30 + 5 D) μ in	Laser Micrometer
Linear Graduated Glass Stages (Error of indication) ^{FO}	0.00001 in to 24 in	(90 + 16 L) μ in	Vision System, Laser
Pin Gages ^{FO}	0.01 in to 2 in	(30 + 5 D) μ in	Laser Micrometer
Optical Comparator ^{FO}	Stage travel: Up to 24 in Magnification: 5, 10, 20, 25, 31, .25, 50, 62.5, 100, 200 x	(130 + 15 L) μ in 0.005 % of Magnification	Glass Scale/Mag Scale/ Glass Grid or Laser
Vision ^{FO}	Up to 96 in each axis	(14 + 17 L) μ in	
Microscopes Tool Makers Scopes Measuring Scopes ^{FO}	Magnification .3x to 2500x Stage travel Up to 24 in	.005 % of Magnification (14 + 17 L) μ in	Vision System with Probe
Feeler Gages ^{FO}	0.001 in to 0.2 in	26 μ in	
Radius Gage ^{FO}	0.01 in to 1 in	(95 + 10 R) μ in	Vision System
Squares ^{FO}	0.01 in to 12 in	130 μ in	
Gage Blocks ^{FO}	0.1 in to 8 in	(2 + 3 L) μ in	Comparison to Gage Blocks
CMM Linear Accuracy ^{FO}	Up to 120 in	(41 + 10 L) μ in	Laser/Scale, Ball Bar
Surface Plates - Flatness ^{FO}	4 in to 96 in	(81 + 1.3 L) μ in	Autocollimator, Electronic level, Laser
Surface Plates - Repeat Reading ^{FO}	0.002 in	26 μ in	Repeat-o-Meter
Rules / Scales ^{FO}	0.1 in to 96 in	0.029 μ in	Vision System
Ring Gage (Plain) ^{FO}	0.2 in to 10 in	(54 + 5 L) μ in	Vision / Touch Probe
Universal Length Measuring - ID ^{FO}	Up to 120 in	(7 + 5 L) μ in	Gage Blocks & Laser
Universal Length Measuring - OD ^{FO}			



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

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represent the smallest measurement uncertainties attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is 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 term L represents length in inches or millimeters appropriate to the uncertainty statement.
4. The term D represents diameter in inches or millimeters appropriate to the uncertainty statement.
5. The term R represents radius in inches or millimeters appropriate to the uncertainty statement.
6. 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.