



# 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 17025:2017**

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, Mechanical and Mass 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:*

March 26, 2007

*Issue Date:*

May 19, 2022

*Expiration Date:*

July 31, 2024

*Accreditation No.:*

59397

*Certificate No.:*

L22-379

*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.pjllabs.com](http://www.pjllabs.com)*



# Certificate of Accreditation: Supplement

## Quality Control Solutions, Inc.

43339 Business Park Drive, Suite #101, Temecula, CA 92590  
 Contact name: 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 <sup>FO</sup>	Up to 2 in	(79 + 7L) $\mu$ in	Comparison to Gage Blocks, Vision System WI-07 WI-04 WI-03 WI-06 WI-05 WI-06
Height Gages <sup>FO</sup>	Up to 60 in	(562 + 20L) $\mu$ in	
Calipers <sup>FO</sup>	Up to 36 in	(340 + 39L) $\mu$ in	
ID Micrometer <sup>FO</sup>	1.5 in to 12 in	(98 + 12L) $\mu$ in	
Depth Micrometer <sup>FO</sup>	Up to 12 in	(96 + 9L) $\mu$ in	
OD Micrometer <sup>FO</sup>	Up to 4 in	(53 + 6L) $\mu$ in	
	4 in to 12 in	(68 + 8L) $\mu$ in	
Laser Micrometer <sup>FO</sup>	0.01 in to 1 in	33 $\mu$ in	Master Pins WI-11
	0.01 in to 2 in	49 $\mu$ in	
Plain Plug Gages <sup>FO</sup>	0.01 in to 2 in	(30 + 5D) $\mu$ in	Laser Micrometer WI-12
Linear Graduated Glass Stages (Error of indication) <sup>FO</sup>	0.000 01 in to 24 in	(90 + 16L) $\mu$ in	Vision System, Laser WI-35
Pin Gages <sup>FO</sup>	0.01 in to 2 in	(30 + 5D) $\mu$ in	Laser Micrometer WI-12
Optical Comparator <sup>FO</sup>	Stage travel: Up to 24 in Magnification: 5, 10, 20, 25, 31, 0.25, 50, 62.5, 100, 200 x	(130 + 15L) $\mu$ in 0.005 % of Magnification	Glass Scale/Mag Scale/ Glass Grid or Laser WI-09 WI-10 WI-14
Vision <sup>FO</sup>	Up to 96 in each axis	(14 + 17L) $\mu$ in	
Microscopes Tool Makers Scopes Measuring Scopes <sup>FO</sup>	Magnification 0.3 x to 2 500 x Stage travel Up to 24 in	0.005 % of Magnification (14 + 17L) $\mu$ in	
Feeler Gages <sup>FO</sup>	0.001 in to 0.2 in	26 $\mu$ in	Vision System with Probe WI-19
Radius Gage <sup>FO</sup>	0.01 in to 1 in	(95 + 10R) $\mu$ in	Vision System WI-22 WI-23
Squares <sup>FO</sup>	0.01 in to 12 in	130 $\mu$ in	
Gage Blocks <sup>FO</sup>	0.1 in to 8 in	(2 + 3L) $\mu$ in	Comparison to Gage Blocks WI-19
CMM Linear Accuracy <sup>FO</sup>	Up to 120 in	(41 + 10L) $\mu$ in	Laser/Scale, Ball Bar WI-19
Surface Plates – Flatness <sup>FO</sup>	4 in to 96 in	(81 + 1.3L) $\mu$ in	Autocollimator, Electronic level, Laser WI-26
Surface Plates - Repeat Reading <sup>FO</sup>	0.002 in	26 $\mu$ in	Repeat-o-Meter WI-26



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### Dimensional

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Rules/Scales <sup>FO</sup>	0.1 in to 96 in	0.029 $\mu$ in	Vision System WI-34
Ring Gage (Plain) <sup>FO</sup>	0.2 in to 10 in	(54 + 5L) $\mu$ in	Vision / Touch Probe WI-15
Universal Length Measuring – ID <sup>FO</sup>	Up to 120 in	(7 + 5L) $\mu$ in	Gage Blocks & Laser WI-30
Universal Length Measuring – OD <sup>FO</sup>			
Thread Plug Gage Pitch Diameter <sup>FO</sup>	M 1.6 x 0.35 to M 100 x 6 0-80 to 4-10	(120 + 25.6D) $\mu$ in	ULM / Vision System Thread Measuring Wires WI-17
Thread Plug Gage Major Diameter <sup>FO</sup>	M 1.6 x 0.35 to M 100 x 6 0-80 to 4-10	(26 + 15.9D) $\mu$ in	ULM / Vision System WI-17
Thread Rings Pitch Diameter <sup>FO</sup>	M 1.6 x 0.35 to M 100 x 6 0-80 to 4-10	(180 + 80.71D) $\mu$ in	Master Threaded Set Plug WI-18
Thread Rings Minor Diameter <sup>FO</sup>	M 1.6 x 0.35 to M 100 x 6 0-80 to 4-10	(57 + 18.8D) $\mu$ in	Master Plain Class X Set Plug WI-18
<b>Machining Center</b>			
Linear Accuracy <sup>FO</sup>	Up to 120 in	(0.3+1.4L) $\mu$ in	Laser WI-41
Straightness <sup>FO</sup>	Up to 120 in	(0.3 + 0.3L) $\mu$ in	Laser WI-41
Flatness <sup>FO</sup>	Up to 120 in	(26 + 0.3L) $\mu$ in	Electronic Levels WI-41
Squareness <sup>FO</sup>	0.000 1 in to 0.01 in	(10 + 0.12L) $\mu$ in	Laser WI-41
Positional Capability (combined XYZ axis) <sup>FO</sup>	0.000 01 in to 0.01 in	(1.5 + 0.36L) $\mu$ in	ISO 230-2, ASME B5.54, 7.3; B5.57, 8.4 WI-41



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

### Dimensional

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<b>Spindle Analysis</b>			
Total Error <sup>FO</sup>	0.000 01 in to 0.01 in	(3.5 + 0.36L) $\mu$ in	ASME B89.3.4 Turning: ISO 230-7, 5.5; ASME B5.57, 7.5.3; Milling: ISO 230-7, 5.4; ASME B5.54, 7.5.3; ASME B5.57, 7.6.4 WI-41
Synchronous (Roundness) <sup>FO</sup>	0.000 01 in to 0.01 in	(3.5 + 0.36L) $\mu$ in	Turning: ISO 230-7, 5.5; ASME B5.57, 7.5.3 Milling: ISO 230-7, 5.4; ASME B5.54, 7.5.3; ASME B5.57, 7.6.4 WI-41
Asynchronous (Surface Roughness) <sup>FO</sup>	0.000 01 in to 0.01 in	(3.5 + 0.36L) $\mu$ in	ASME: B89-3-4, A-7.3 • Turning: ISO 230-7, 5.5; ASME B5.57, 7.5.3 • Milling: ISO 230-7, 5.4; ASME B5.54, 7.5.3; ASME B5.57, 7.6.4 WI-41

### Mechanical

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
Pressure/ Vacuum <sup>FO</sup>	-12 psi to 300 psi -0.83 to bar	0.01 psi 0.001 bar	Positive Pressure $\pm$ 0.05% FS Vacuum $\pm$ 0.1% FS WI-37; MFG SPECIFICATIONS



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### Mass Force and Weighing Devices

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
Class 1, Scales <sup>FO</sup>	1 mg to 200 g	$(1.16 \times 10^3 + 3.00 \times 10^3 \text{ Wt}) \text{ g}$	ASTM Class 1 weights WI-39
Class 2, Scales <sup>FO</sup>	1 mg to 500 g	$(1.16 \times 10^3 + 2.73 \times 10^3 \text{ Wt}) \text{ g}$	ASTM Class 1 weights WI-39
Class 3, Scales <sup>FO</sup>	0.001 lb to 50 lb	$(1.16 + 2.73 \times 10^5 \text{ Wt}) \text{ lb}$	Class F NIST weights WI-39
Force Gauge/ Load Cells <sup>FO</sup>	01 gf to 50 gf	0.01 % full scale	ASTM Class 1 weights WI-27
	0.02 gf to 100 gf	0.02 % full scale	
	0.05 gf to 250 gf	0.04 % full scale	
	0.2 gf to 1 000 gf	0.05 % full scale	
	0.001 lb to 5 lb	0.03 % full scale	NIST Class F WI-27
	0.01 lb to 50 lb	0.06 % full scale	
	0.1 lb to 500 lb	0.09 % full scale	Master Load Cell WI-27
	0.5 lb to 1 000 lb	0.11 % full scale	
1 lb to 1 500 lb	0.5 % full scale		

- 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.
- 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.
- The term L represents length in inches or millimeters appropriate to the uncertainty statement.
- The term D represents diameter in inches or millimeters appropriate to the uncertainty statement.
- The term R represents radius in inches or millimeters appropriate to the uncertainty statement.
- The term Wt represents weight in grams or pounds appropriate to the uncertainty statement.
- 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<sup>FO</sup> would mean that the laboratory performs this calibration at its fixed location and onsite at customer locations.