



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Phoenix Small Tool & Calibration

835 West 22nd Street #109, Tempe, AZ 85282

(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, Electrical, Force, Mechanical, Pressure and Thermodynamic 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:

<i>Initial Accreditation Date:</i>	<i>Issue Date:</i>	<i>Accreditation No.:</i>	<i>Certificate No.:</i>
January 12, 2013	January 12, 2013	74497	L13-9

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.pjilabs.com



Certificate of Accreditation: Supplement

Phoenix Small Tool & Calibration

835 West 22nd Street, #109, Tempe, AZ 85282
 Don Weeks Phone: 602-256-7011

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
Micrometers Outside	0.1 in to 1 in	67 μ m + 0.121 μ m/in	Gage Blocks Surface Plate, Optical Flats
	1 in to 12 in	230 μ m + 0.327 μ m/in	
	12 in to 36 in	1 100 μ m + 0.28 μ m/in	
Micrometers Inside	2 in to 36 in	950 μ m + 0.257 μ m/in	Gage Blocks Surface Plate
Micrometers Depth	0.1 in to 12 in	850 μ m + 0.089 1 μ m/in	
Length Standards	1 in to 12 in	180 μ m + 0.492 μ m/in	Gage Blocks, Surface Plate, Height Comparator Super Micrometer
	12 in to 36 in	520 μ m + 0.586 μ m/in	
Test Indicators	0.000 1 in to 0.5 in	74 μ m	Gage Blocks, Surface Plate, Indicator Calibrator
Dial Indicators	0.05 in to 4 in	580 μ m	
Calipers	0.1 in to 6 in	680 μ m + 0.084 μ m/in	Gage Blocks, Ring Gages, Surface Plate
	6 in to 12 in	720 μ m + 0.158 μ m/in	
	12 in to 24 in	1 400 μ m + 0.23 μ m/in	
Height Gage	0.1 in to 12 in	220 μ m + 0.511 μ m/in	Gage Blocks, Surface Plate
	12 in to 24 in	370 μ m + 0.637 μ m/in	
Pin/Plug Gages	0 in to 1 in	55 μ m + 0.378 μ m/in	Gage Blocks, Super micrometer
Steel Rules Tape Measures	Up to 48 in	9 100 μ m + 0.032 5 μ m/in	Standard Steel Rule, Weight, Gage Blocks

Electrical

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
Equipment to Measure DC Voltage	0.1 mV to 329.999 9 mV	0.012 mv + 50 μ V/V	Fluke 5500A/SC300
	0.1 V to 3.299 999 V	0.12 mv + 33 μ V/V	
	0.3 V to 32.999 99 V	0.55 mV + 45 μ V/V	
	30 V to 329.999 9 V	4.7 mV + 53 μ V/V	
	100 V to 1 020 V	55 mV + 31 μ V/V	
Equipment to Measure DC Current	0.1 mA to 3.299 99 mA	0.41 μ A + 80 nA/A	Fluke 5500A/SC300
	0.1 mA to 32.999 9 mA	0.76 μ A + 0.01 μ A/A	
	0.1 mA to 329.999 mA	7.4 μ A + 0.01 μ A/A	
	0.1 A to 2.199 99 A	0.21 mA + 0.28 mA/A	
	2 A to 11 A	0.9 mA + 0.65 mA/A	



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Equipment to Measure AC Voltage at the Listed Frequencies			Fluke 5500A/SC300
10 Hz to 45 Hz	1mV to 32.999 mV	0.11 mV + 3.51 μ V/V	
45 Hz to 10 kHz	1mV to 32.999 mV	0.11 mV + 1.06 μ V/V	
10 kHz to 20 kHz	1mV to 32.999 mV	0.11 mV + 1.64 μ V/V	
20 kHz to 50 kHz	1mV to 32.999 mV	0.11 mV + 2.82 μ V/V	
50 kHz to 100 kHz	1mV to 32.999 mV	0.11 mV + 4.6 μ V/V	
100 kHz to 500 kHz	1mV to 32.999 mV	0.12 mV + 11.3 μ V/V	
Equipment to Measure AC Voltage at the Listed Frequencies			
10 Hz to 45 Hz	33 mV to 329.999 mV	0.11 mV + 3.44 μ V/V	
45 Hz to 10 kHz	33 mV to 329.999 mV	0.1 mV + 0.65 μ V/V	
10 kHz to 20 kHz	33 mV to 329.999 mV	0.1 mV + 1.28 μ V/V	
20 kHz to 50 kHz	33 mV to 329.999 mV	0.11 mV + 2.51 μ V/V	
50 kHz to 100 kHz	33 mV to 329.999 mV	0.22 mV + 3.6 μ V/V	
100 kHz to 500 kHz	33 mV to 329.999 mV	0.37 mV + 6.16 μ V/V	
Equipment to Measure AC Voltage at the Listed Frequencies			
10 Hz to 45 Hz	0.33V to 3.299 99 V	0.48 mV + 2.42 mV/V	
45 Hz to 10 kHz	0.33V to 3.299 99 V	0.26 mV + 0.523 mV/V	
10 kHz to 20 kHz	0.33V to 3.299 99 V	0.23 mV + 0.114 mV/V	
20 kHz to 50 kHz	0.33V to 3.299 99 V	4.2 mV + 2.36 mV/V	
50 kHz to 100 kHz	0.33V to 3.299 99 V	1.9 mV + 3.55 mV/V	
100 kHz to 500 kHz	0.33V to 3.299 99 V	3.8 mV + 6.16 mV/V	
Equipment to Measure AC Voltage at the Listed Frequencies			
10 Hz to 45 Hz	3.3 V to 32.999 9 V	4.8 mV + 2.42 mV/V	
45 Hz to 10 kHz	3.3 V to 32.999 9 V	2.5 mV + 0.60 mV/V	
10 kHz to 20 kHz	3.3 V to 32.999 9 V	3.9 mV + 1.3 mV/V	
20 kHz to 50 kHz	3.3 V to 32.999 9 V	6.0 mV + 3.18 mV/V	
50 kHz to 100 kHz	3.3 V to 32.999 9 V	3.1 mV + 6.4 mV/V	
Equipment to Measure AC Voltage at the Listed Frequencies			
45 Hz to 1 kHz	33 V to 329.999 9 V	16 mV + 8.2 mV/V	
1 kHz to 10 kHz	33 V to 329.999 9 V	11 mV + 1.07 mV/V	
10 kHz to 20kHz	33 V to 329.999 9 V	12 mV + 7.0 mV/V	



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Equipment to Measure AC Voltage at the Listed Frequencies			Fluke 5500A/SC300
45 Hz to 1 kHz	330 V to 1 020 V	48 mV + 1.82 mV/V	
1 kHz to 5 kHz	330 V to 1 020 V	22 mV + 2.44 mV/V	
5 kHz to 10 kHz	330 V to 1 020 V	23 mV + 2.44 mV/V	
Equipment to Measure AC Current at the Listed Frequencies			
10 Hz to 20 Hz	0.029 mA to 0.329 99 mA	1.5 μ A + 2.3 nA/A	
20 Hz to 45 Hz	0.029 mA to 0.329 99 mA	1.5 μ A + 1.24 nA/A	
45 Hz to 1 kHz	0.029 mA to 0.329 99 mA	1.6 μ A + .874 nA/A	
1 kHz to 5 kHz	0.029 mA to 0.329 99 mA	1.5 μ A + 6.43 nA/A	
5 kHz to 10 kHz	0.029 mA to 0.329 99 mA	1.4 μ A + 17.1 mA/A	
Equipment to Measure AC Current at the Listed Frequencies			
10 Hz to 20 Hz	0.33 mA to 3.299 9 mA	2 μ A + 2.72 μ A/A	
20 Hz to 45 Hz	0.33 mA to 3.299 9 mA	2 μ A + 1.15 μ A/A	
45 Hz to 1 kHz	0.33 mA to 3.299 9 mA	2.1 μ A + 0.9 μ A/A	
1 kHz to 5 kHz	0.33 mA to 3.299 9 mA	2 μ A + 6.15 μ A/A	
5 kHz to 10 kHz	0.33 mA to 3.299 9 mA	1.9 μ A + 15.4 μ A/A	
Equipment to Measure AC Current at the Listed Frequencies			
10 Hz to 20 Hz	3.3 mA to 32.999 mA	6.8 μ A + 2.9 μ A/A	
20 Hz to 45 Hz	3.3 mA to 32.999 mA	7.2 μ A + 2.1 μ A/A	
45 Hz to 1 kHz	3.3 mA to 32.999 mA	7.1 μ A + 1.3 μ A/A	
1 kHz to 5 kHz	3.3 mA to 32.999 mA	7.0 μ A + 4.16 μ A/A	
5 kHz to 10 kHz	3.3 mA to 32.999 mA	6.8 μ A + 2.9 μ A/A	
Equipment to Measure AC Current at the Listed Frequencies			
10 Hz to 20 Hz	33 mA to 329.99 mA	65 μ A + 2.9 μ A/A	
20 Hz to 45 Hz	33 mA to 329.99 mA	65 μ A + 1.3 μ A/A	
45 Hz to 1 kHz	33 mA to 329.99 mA	67 μ A + 1.3 μ A/A	
1 kHz to 5 kHz	33 mA to 329.99 mA	67 μ A + 3.3 μ A/A	
5 kHz to 10 kHz	33 mA to 329.99 mA	55 μ A + 7.3 μ A/A	



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Equipment to Measure AC Current at the Listed Frequencies			Fluke 5500A/SC300
10 Hz to 45Hz	0.33 A to 2.199 99 A	0.75 mA + 3.3 mA/A	
45 Hz to 1kHz	0.33 A to 2.199 99 A	0.79 mA + 1.6 mA/A	
1 kHz to 5kHz	0.33 A to 2.199 99 A	0.69 mA + 18.3 mA/A	
Equipment to Measure AC Current at the Listed Frequencies			
45 Hz to 65 Hz	2.2 A to 11 A	5.2 mA + 2.4 mA/A	
65 Hz to 500 Hz	2.2 A to 11 A	5.5 mA + 1.55 mA/A	
500 Hz to 1 kHz	2.2 A to 11 A	4.8 mA + 5.94 mA/A	
Equipment to Measure Frequency 12 kHz to 2 MHz	0.01 Hz to 11.999 kHz	30 ppm +/- 30 mHz	
Equipment to Measure Resistance	11 Ω to 329.99 Ω	100 $\mu\Omega/\Omega$ + 19 m Ω	
	330 Ω to 3.299 99 k Ω	100 $\mu\Omega/\Omega$ + 88 m Ω	
	3.3 k Ω to 329.999 k Ω	128 $\mu\Omega/\Omega$ + 11 m Ω	
	330 k Ω to 3.299 99 M Ω	407 $\mu\Omega/\Omega$ + 1.5 k Ω	
	3.3 M Ω to 32.999 9 M Ω	958 $\mu\Omega/\Omega$ + 7.7 k Ω	
	33 M Ω to 109.999 M Ω	1 300 $\mu\Omega/\Omega$ + 120 k Ω	
	110 M Ω to 330 M Ω	2.5 m Ω/Ω + 1 800 k Ω	
Equipment to Measure Capacitance	0.33 nF to 11 nF	0.075 nF	
	11 nF to 110 nF	0.458 nF	
	110 nF to 330 nF	1.461 nF	
	0.33 μ F to 1.1 μ F	2.85 nF	
	1.1 μ F to 3.3 μ F	0.018 μ F	
	3.3 μ F to 11 μ F	0.057 μ F	
	11 μ F to 33 μ F	0.199 6 μ F	
	33 μ F to 110 μ F	0.763 μ F	
	110 μ F to 330 μ F	1.434 μ F	
	330 μ F to 1 100 μ F	2.777 μ F	



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Temperature Calibration, Indication and Control Equipment used with Thermocouple Type E	-100 °C to 0 °C	0.31 °C	Electrical Simulation of Thermocouple Output - Fluke 5500A/SC300/ Special Limit Thermocouple Wire
	0 °C to 300 °C	0.29 °C	
	300 °C to 900 °C	0.35 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type J	0 °C to 300 °C	0.29 °C	
	300 °C to 750 °C	0.31 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type K	-100 °C to 120 °C	0.32 °C	
	120 °C to 1 000 °C	0.38 °C	
	1 000 °C to 1 250 °C	0.52 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type S	0 °C to 250 °C	0.60 °C	
	250 °C to 1 000 °C	0.49 °C	
	1 000 °C to 1 450 °C	0.49 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type T	-150 °C to 0 °C	0.37 °C	
	0 °C to 350 °C	0.29 °C	
Temperature Calibration, Indication and Control Equipment used with RTD Type Pt385	-200 °C to 800 °C	0.48 °C	Electrical Simulation of RTD Output - Fluke 5500A/SC300 Mfg. Special Leads

Mass Force and Weighing

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
Equipment to Measure Force and Tension	0.50 lbs to 50 lbs	2.5g	Class F Weights
	50 lbs to 350 lbs	17.5g	



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Mechanical

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Equipment to Measure Pressure	-14.7 psig to 100 psig	0.049 psig	Mensor 2400 Precision Pressure Standard, Ashcroft DWT
	1 psig to 1 000 psig	0.76 psig	
	5 psig to 2 000 psig	3.75 psig	
	50 psig to 10 000 psig	13.65 psig	
Equipment to Output Torque	5 lbf•in to 50 lbf•in	0.187 lbf•in	CDI Suretest Torque Tester
	30 lbf•in to 400 lbf•in	1.264 lbf•in	
	25 lbf•ft to 250 lbf•ft	1.38 lbf•ft	
	60 lbf•ft to 600 lbf•ft	2.588 lbf•ft	
	200 lbf•ft to 2 000 lbf•ft	5.78 lbf•ft	

Thermodynamic

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
Temperature Measurement Thermocouple Type K	0 °C to 800 °C	3.33 °C	CL 27A, With Special Limit Thermocouple Wire
Temperature Measurement Thermocouple Type J	-210 °C to 600 °C	3.11 °C	
Temperature Measurement Thermocouple Type T	-200 °C to 350 °C	1.89 °C	
Temperature Measurement Thermocouple Type E	-230 °C to 500 °C	2.95 °C	
Equipment to Output Temperature	0 °C to 100 °C	0.22 °C	Precision RTD
Oven Uniformity and Oven Surveys	Ambient to 600 °C	3.16 °C	Thermocouple Data logger, Special Limit J Thermocouple Wire

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.



Perry Johnson Laboratory Accreditation, Inc.



January 12, 2013

Mr. Don Weeks
Phoenix Small Tool & Calibration
835 West 22nd Street, #109
Tempe, AZ 85282

Dear Mr. Weeks:

This letter is to confirm that you have successfully completed your accreditation assessment. A certificate has now been granted and posted on our website. As you are aware, PJLA will no longer be issuing expiration dates on our certificates. Your certificate # **L13-9** will remain valid as long as you continue to maintain your annual assessments and reaccreditation assessments as stated in your customer agreement with PJLA. At this time, we have confirmed that your annual assessments will be conducted during the month of **November** each calendar year. This will include an interim surveillance assessment and a full system reassessment to be completed by **November 2014**. Once your reassessment is conducted and approved by our accreditation committee a revised status letter will be provided to you. Please allow PJLA at least 120 days from your assessment due date to issue this letter.

Please feel free to release this letter to any interested parties as confirmation of your certificate validity. Also, please remind them that your certificate is posted on our website at all times. Any changes in regards to your accreditation status will be reflected on our website.

We would like to thank you for your patronage and we look forward to continuously serving your accreditation needs in the future. If we can assist you any further, please feel free to contact us at any time.

Sincerely,

Tracy Szerszen
President/Operations Manager