



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

**Wayac Scales & Calibration, Inc.
2899 Hilliard Rome Road
Hilliard, OH 43026**

(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, Mass, Force, Weighing Device, Time & Frequency, Mechanical,
Thermodynamic, Electrical, and Chemical Calibration
(As detailed in the supplement)**

Such testing and/or calibration services shall only be offered at or from the address given above. 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:

The validity of this certificate is mandated through ongoing surveillance.

Tracy Szerszen
President/Operations Manager

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

Initial Accreditation Date:

April 08, 2003

Issue Date:

September 12, 2011

Accreditation No.:

59301

Certificate No.:

L11-82

Page No.:

Page 1 of 8



Certificate of Accreditation: Supplement

Wayac Scales & Calibration, Inc.
 2899 Hilliard Rome Road
 Hilliard, OH 43026

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

Dimensional

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Calipers Digital, Dial and Vernier	1.27 mm to 152.4 mm (0.05 in to 6 in)	0.038 1mm (0.001 5 in)	Mitutoyo BE1-35-2F Gage Blocks Mitutoyo Length Standards Kees Ring Gage
	152.4 mm to 457.2 mm (6 in to 18 in)	0.045 7 mm (0.001 8 in)	
	457.2 mm to 914.4 mm (18 in to 36 in)	0.091 4 mm (0.003 6 in)	
Height Gages	1.27 mm to 152.4 mm (0.05 in to 6 in)	0.033 mm (0.001 3 in)	Mitutoyo BE1-35-2F Gage Blocks Mitutoyo Length Standards
	152.4 mm to 457.2 mm (6 in to 18 in)	0.054 mm (0.002 2 in)	
	457.2 mm to 914.4 mm (18 in to 36 in)	0.078 7 mm (0.003 1 in)	
Outside Micrometers	1.27 mm to 152.4 mm (0.05 in to 6 in)	0.006 1 mm (0.000 24 in)	Mitutoyo BE1-35-2F Gage Blocks Mitutoyo Length Standards Kees Ring Gage
	152.4 mm to 457.2 mm (6 in to 18 in)	0.011 9 mm (0.000 47 in)	
	457.2 mm to 914.4 mm (18 in to 36 in)	0.011 9 mm (0.000 47 in)	
Depth Micrometers	1.27 mm to 152.4 mm (0.05 in to 6 in)	0.006 1 mm (0.000 24 in)	Mitutoyo BE1-35-2F Gage Blocks Mitutoyo Length Standards
	152.4 mm to 304.8 mm (6 in to 12 in)	0.011 9 mm (0.000 47 in)	
Inside Micrometers	1.27 mm to 152.4 mm (0.05 in to 6 in)	0.007 1 mm (0.000 28 in)	Mitutoyo BE1-35-2F Gage Blocks Mitutoyo Length Standards Calipers
	152.4 mm to 457.2 mm (6 in to 18 in)	0.012 9 mm (0.000 50 in)	
	457.2 mm to 914.4 mm (18 in to 36 in)	0.012 9 mm (0.000 50 in)	
Dial & Digital Indicators	1.27 mm to 50.8 mm (0.05 in to 2 in)	0.042 mm (0.001 7 in)	Boekeler 1M-1338 Dial Indicator Calibrator
Pin Gages	0.279 4 mm to 25.4 mm (0.011 in to 1 in)	0.002 6 mm (0.000 10 in)	Mitutoyo 293-761-30
Smooth Plug Gages	0.279 4 mm to 127 mm (0.011 in to 5 in)	0.000 86 mm (0.000 034 in)	Pratt & Whitney U30700 Super-Micrometer with Mitutoyo Grade 1 Ceramic Gage Blocks
Thread Plug Gages / Pitch Diameter	5-80 to 0.2-10	0.003 81 mm (0.001 5 in)	Pratt & Whitney U30700 Super-Micrometer with Van Keuren Thread Wire Sets



Certificate of Accreditation: Supplement

Wayac Scales & Calibration, Inc.
 2899 Hilliard Rome Road
 Hilliard, OH 43026

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

Dimensional

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Smooth Ring Gages	3.175 mm to 76.2 mm (0.012 5 in to 3 in)	0.000 736 mm (0.000 029 in)	Pratt & Whitney U30700 Super-Micrometer with Mitutoyo Grade 1 Ceramic Gage Blocks
Rules & Tapes Error of Indication	9 144 mm maximum (360 in maximum)	0.39 mm (0.016 in)	Starrett C636-1000, Mitutoyo Gage Block Set
Surface Plates – Repeat Reading	0.508 mm (0.02 in)	1.27 μ m (50 μ in)	Rahn Repeat-O-Meter Mahr Extrames 2000
Surface Plates - Flatness	152.4 mm to 1 219.2 mm (6 in to 48 in)	0.007 4 mm (0.000 29 in)	Starrett Planekator Grade AA

Mass, Force, and Weighing Devices

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Weigh Balances	.1 mg to 1 g 1 g to 32000 g	0.1 % of reading	Class 1 Weights
Weigh Scales	226.796 g to 22 679.62 g (0.5 lb to 50 lbs)	0.1 % of reading	F Class Weights
	45.36 g to 2 267.96 kg (100 lb to 5 000 lb)		
	2 721.55 kg to 18 143.69 kg (6 000 lb to 40 000 lb)		
	22 679.62 kg to 90 718.47 kg (50 000 lb to 200 000 lb)		
Tension Compression	1.35 N to 4 448.222 N (.3 lb to 1 000 lb)	0.45 N (0.10 lb)	GSE Indicator with NTEP Approved Load Cells
	222.41 kN to 44.482 22 kN (50 lb to 10 000 lb)	0.047 kN (10.44 lb)	GSE Indicator with NTEP Approved Load Cells



Certificate of Accreditation: Supplement

Wayac Scales & Calibration, Inc.
 2899 Hilliard Rome Road
 Hilliard, OH 43026

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

Time and Frequency

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Digital/Mechanical Tachometer	40.00 rpm to 99 999 rpm	(1.18 + 0.000 3R) rpm	Ametek 1965
Timers	4 hr to 24 hr	1.5 s	Extech C-510
Stopwatches	4 hr to 24 hr	0.5 s	Tektronix DC 503A

Mechanical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Rockwell Hardness Testers Indirect Verification	HRBW	2 HRBW	ASTM E 18-08a and Calibrated Rockwell Test Blocks
	40 to 59 HRBW		
	60 to 79 HRBW		
	80 to 100 HRBW		
	HRC	2 HRC	
	20 to 39 HRC		
40 to 59 HRC			
Electronic or Dial Pressure Gages, Commercial Grade, Medium Grade and Test Grade Transducers Stated values are gage pressure	3.103 kPa to 2 068.427 kPa (0.45 psi to 300 psi)	0.896 kPa (0.13 psi)	Druck DP 610 with External Transducer
	2 075.3 kPa to 68 947.6 kPa (301 psi to 10 000 psi)	25.993 kPa (3.8 psi)	
Magnahelics and Photohelics Gages	32.38 Pa to 249.089 Pa (0.13 in H ₂ O to 1 in H ₂ O)	10.212 Pa (0.041 in H ₂ O)	Dwyer 475 III Manometers
	69.745 Pa to 996.356 Pa (0.28 in H ₂ O to 4 in H ₂ O)	23.14 Pa (0.093 in H ₂ O)	
Low Pressure Dial type Standard Gages Stated values are gage pressure	2.50 kPa to 206. 843 kPa (10 in H ₂ O to 30 in H ₂ O)	0.83 kPa (3.3 in H ₂ O)	Druck DP 610



Certificate of Accreditation: Supplement

Wayac Scales & Calibration, Inc.
 2899 Hilliard Rome Road
 Hilliard, OH 43026

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

Mechanical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Tensiometer Types C5, C6, C7, C8, C9	25.35 N to 7 117.15 N (5.7 lbf to 1 600 lbf)	8.45 N (1.9 lbf)	Certified F Class Weights
	44.48 N to 889.64 N (10 lbf to 200 lbf)	8.45 N (1.9 lbf)	
	667.23 N to 3 558.58 N (150 lbf to 800 lbf)	8.45 N (1.9 lbf)	
Torque Wrenches, Torque Drivers	0.282 4 N·m to 2.824 N·m (40 ozf·in to 400 ozf·in)	0.0261 N·m (3.7 ozf·in)	CDI Torque Standards
	0.564 9 N·m to 5.649 N·m (5 lbf·in to 50 lbf·in)	0.192 N·m (1.7 lbf·in)	
	0.282 46 N·m to 28.246 N·m (25 lbf·in 250 lbf·in)	0.226 N·m (2.0 lbf·in)	
	11.298 5 N·m to 112.985 ·m (100 lbf·in to 1 000 lbf·in)	0.802 N·m (7.1 lbf·in)	
	81.349 1 N·m to 813.491 N·m (720 lbf·in to 7 200 lbf·in)	5.54 N·m (49 lbf·in)	

Thermodynamics

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Thermometers Glass Spirit and Mercury Filled	33 °C to 300 °C (92 °F to 572 °F)	0.888 °C (1.6 °F)	Hart 5853T Dry Block Omega CL-27
Digital Thermometers with built in Sensors	33 °C to 300 °C (92 °F to 572 °F)	0.722 °C (1.3 °F)	
Digital Temperature Controllers	0 °C to 1 260 °C (32 °F to 2 300 °F)	0.338 °C (0.61 °F)	
Relative Humidity	10 % to 95 % Non-condensing	5.1 %	Industrial Instruments 22010 Psychro-dyne
Non Contact Infrared Temperature Thermometers, Pyrometers	-6.6 °C to 400 °C (20.12 °F to 752 °F)	1.611 °C (2.9 °F)	Omega BB703 Black Body



Certificate of Accreditation: Supplement

Wayac Scales & Calibration, Inc.
 2899 Hilliard Rome Road
 Hilliard, OH 43026

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

Chemical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
CO ₂ Concentration Analysis	5 % CO ₂ to 60 % CO ₂	1.5 % CO ₂ + 10% of reading	Bacharach 2820

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure DC Voltage	0 mV to 19.999 9 mV	0.015 % of setting + 0.003 % of range + 15 μ V	Fluke 5100B
	20 mV to 199.999 mV	0.015 % of setting + 0.003 % of range + 15 μ V	
	0.2 V to 1.999 99 V	0.015 % of setting + 0.003 % of range + 15 μ V	
	2 V to 19.999 9 V	0.015 % of setting + 0.003 % of range + 15 μ V	
	20 V to 199.999 V	0.015 % of setting + 0.003 % of range + 15 μ V	
	200 v to 1 100.00 V	0.015 % of setting + 0.003 % of range + 15 μ V	
Equipment to Measure AC Voltage 50 Hz to 50 kHz	1 mV to 19.999 9 mV	0.08 % of reading + 52 μ V	
	20 mV to 199.999 mV	0.08 % of reading + 66 μ V	
	0.20 V to 1.999 99 V	0.08 % of reading + 210 μ V	
	2 V to 19.999 9 V	0.08 % of reading + 1.6 mV	
Equipment to Measure AC Voltage 50 Hz to 20 kHz	20 V to 110.00 V	0.08 % of reading + 16 mV	
Equipment to Measure AC Voltage 50 Hz to 1 kHz	110 V to 199.99 V	0.05 % of reading + 10 mV	
	200 V to 1 100 V	0.05 % of reading + 50 mV	
Equipment to Measure DC Current	10 μ A to 199.999 μ A	0.075 % of setting + 0.007 5% of range - 0.03 μ A	
	0.2 mA to 1.999 99 mA	0.075 % of setting + 0.007 5% of range - 0.03 μ A	
	2 mA to 19.999 9 mA	0.075 % of setting + 0.007 5% of range - 0.03 μ A	



Certificate of Accreditation: Supplement

Wayac Scales & Calibration, Inc.
 2899 Hilliard Rome Road
 Hilliard, OH 43026

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

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure DC Current	20 mA to 199.99 mA	0.075 % of setting + 0.007 5% of range – 0.03 μ A	Fluke 5100B
	0.2 A to 1.999 99 A	0.075 % of setting + 0.007 5% of range – 0.03 μ A	
Equipment to Measure AC Current 50 Hz to 1 kHz	10 μ A to 199.999 μ A	0.21 % of setting + 0.03 % of range – 0.06 μ A	
	0.2 mA to 1.999 99 μ A	0.21 % of setting + 0.03 % of range – 0.06 μ A	
	2 mA to 19.999 9 mA	0.21 % of setting + 0.03 % of range – 0.06 μ A	
	20 mA to 199.999 mA	0.21 % of setting + 0.03 % of range – 0.06 μ A	
	0.2 A to 1.999 99A	0.21 % of setting + 0.03 % of range – 0.06 μ A	
Equipment to Measure Resistance Fixed Points	1 Ω	0.06 %	
	10 Ω	0.045 % of setting	
	100 Ω	0.045 % of setting	
	1 k Ω	0.045 % of setting	
	100 k Ω	0.045 % of setting	
	1 M Ω	0.045 % of setting	
	10 M Ω	0.15 %	
Equipment to Output DC Voltage	300 mV to 1 000 V	0.035 %	Fluke 867B
Equipment to Output AC Voltage 50 Hz to 30 kHz	300 mV to 300 V	0.7 %	
Equipment to Output AC Voltage 20 Hz to 100 Hz	301 V to 1 000 V	2.1 %	
Equipment to Output DC Current	300 μ A to 10 A	2.2 %	
Equipment to Output AC Current 20 Hz to 30 kHz	300 μ A to 300 mA	6.5 %	



Certificate of Accreditation: Supplement

Wayac Scales & Calibration, Inc.
 2899 Hilliard Rome Road
 Hilliard, OH 43026

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

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output AC Current 20 Hz to 3 kHz	301 mA to 10 A	6.5 %	Fluke 867B
Equipment to Output Resistance	1 Ω to 300 k Ω	0.1 % of reading	
	300.01 k Ω to 3 M Ω	0.2 % of reading	
	3.000 1 M Ω to 30 M Ω	0.3 % of reading	
Equipment to Output Frequency	2 Hz to 2 MHz	0.07 % of reading	
Oscilloscope - Flatness Relative to 50 kHz signal	250 kHz to 100 MHz	1.0 % of reading	Tektronix SG 503
	100 MHz to 250 MHz	3.0 % of reading	
Oscilloscope - Time Marks Horizontal Calibration	5 s to 1 ns	1×10^{-7} s	Tektronix TG 501
Oscilloscope - Amplitude Vertical Calibration	1 mV to 199 mV	10 μ V	Fluke 5100B
	200 mV to 5 V	0.9 mV	

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. R represents rotational rate in rpm.