



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## Certificate of Accreditation

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

***Thwing-Albert Instrument Co.***  
*14 West Collings Ave, West Berlin, NJ 08091*

*(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 April 2017):

***Calibration of Mechanical, Dimensional, Mass, Force, & Weighing Devices and Time & Frequency Instruments***  
*(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:*

August 21, 2014

*Issue Date:*

September 26, 2018

*Expiration Date:*

December 31, 2020

Tracy Szerszen  
President/Operations Manager

*Accreditation No.:*

73494

*Certificate No.:*

L18-477

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



# Certificate of Accreditation: Supplement

## Thwing-Albert Instrument Co.

14 West Collings Ave, West Berlin, NJ 08091  
 Contact Name: Denis Silva Phone: 856-767-1000

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
Thickness <sup>FO</sup>	0.01 in to 0.05 in	6.2 $\mu$ m	Class 2 Gage Blocks
	0.05 in to 0.5 in	(4.7 + 21T) $\mu$ m	
Gage Length <sup>FO</sup>	1 in to 10 in	(22 + 22L) $\mu$ m	Gage Blocks and Gage Block Holders

### 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
Load Cell Tension Force Testers <sup>FO</sup>	1 lbf to 10 lbf	(0.000 065 + 0.000 64F) lbf	Class 6 Weights Keithley 2001 DMM Power supply
	10 lbf to 100 lbf	(0.004 5 + 0.000 2F) lbf	
	100 lbf to 1 000 lbf	(0.008 9 + 0.000 25F) lbf	
Load Cell Compression Force Testers <sup>FO</sup>	100 lbf to 1 000 lbf	(0.001 1 + 0.000 85F) lbf	

### 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
Nonclassified Nonstandard Weight <sup>FO</sup> Note: The tolerance of these non-classified weights is at least 3 times greater than the uncertainty of the class F <sub>1</sub> weights used to calibrate them.	14.71 g	0.94 mg	Class F <sub>1</sub> Single Pan Balance SOP-7
	24.48 g	1.7 mg	
	40 g	3.1 mg	
	63.58 g	4.2 mg	
	65.61 g	4.2 mg	
	131.22 g	2.4 mg	
	245.585 g	3.1 mg	
	262.44 g	2.8 mg	
	297.32 g	1.1 mg	
	400 g	0.8 mg	
	611.44 g	1.1 mg	
	730.97 g	3.7 mg	
	1 237 g	6.6 mg	
	1 718 g	17 mg	
	1 963 g	14 mg	
5 885 g	32 mg		



# Certificate of Accreditation: Supplement

## Thwing-Albert Instrument Co.

14 West Collings Ave, West Berlin, NJ 08091  
 Contact Name: Denis Silva Phone: 856-767-1000

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

### Mass 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
Calibration of ASTM Class 6 and NIST Class F Weights <sup>FO</sup>	100 g	0.6 mg	Class F <sub>1</sub> and Single Pan Balance SOP-7
	200 g	0.65 mg	
	500 g	1 mg	
	1 000 g	1.7 mg	
	1 lb	0.000 007 8 lb	
	2 lb	0.000 015 lb	
	5 lb	0.000 029 lb	
	10 lb	0.000 036 lb	
	20 lb	0.000 097 lb	
Precision Balances <sup>FO</sup>	1 g to 100 g	(0.56 + 0.003Wt) mg Note Wt is in g	Class F <sub>1</sub> weights
	100 g to 1 000 g	(0.38 + 0.001 5Wt) mg Note Wt is in g	
	1 kg to 15 kg	(1.6 + 5.7Wt) mg Note Wt is in kg	
Scales <sup>FO</sup>	1 g to 100 g	(1.2 + 0.13Wt) mg Note Wt is in g	Class 6 Weights
	1 000 g to 15 kg	(2.3 + 0.73Wt) mg Note Wt is in g	
	10 lb to 300 lb	(0.016 + 0.000 75Wt) lb Note Wt is in lb	

### Time and Frequency

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
Crosshead Travel Time <sup>FO</sup>	1 min to 60 min	(0.55 + 0.0016Tm) s	Stopwatch
Rate of rotation <sup>FO</sup>	10 rpm to 10 000 rpm	(0.034 + 0.000 8R) rpm	Tachometer

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.



## *Certificate of Accreditation: Supplement*

### **Thwing-Albert Instrument Co.**

14 West Collings Ave, West Berlin, NJ 08091  
Contact Name: Denis Silva Phone: 856-767-1000

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

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 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.
4. 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.
5. The term T represents thickness in inches.
6. The term L represents length in inches.
7. The term F represents applied force in units appropriate to the uncertainty statement.
8. The term Wt represents weight in units specified in the scope entry.
9. The term Tm represents time interval in seconds.
10. The term R represents Rate of rotation in rpm.