



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## Certificate of Accreditation

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

***A.K.O., Inc.***

***50 Baker Hollow Rd, Windsor, CT 06095***

*(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:*

**ISO/IEC 17025:2005  
& Meets the Requirements of ANSI/NCSL Z540.1-1994  
& ANSI/NCSL Z540.3-2006**

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):

***Mechanical, Mass, Force & Weighing Devices, and Dimensional 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

*Initial Accreditation Date:*

February 4, 2015

*Issue Date:*

October 9, 2018

*Expiration Date:*

January 31, 2021

*Accreditation No:*

79689

*Certificate No:*

L18-466

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

## A.K.O., Inc.

50 Baker Hollow Rd, Windsor, CT 06095  
 Contact Name: Julie Wiezalis Phone: 860-298-9765

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

### 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 Transducers <sup>F</sup>	20 psi to 200 psi	0.03 % of reading	AMETEK Precision Dead Weight Testers <sup>9</sup> Certified Weights
	30 psi to 300 psi	0.03 % of reading	
	50 psi to 500 psi	0.03 % of reading	
	100 psi to 1 000 psi	0.03 % of reading	
	1 000 psi to 10 000 psi	0.03 % of reading	
Torque Drivers <sup>F</sup>	2 ozf•in to 20 ozf•in	1.8 % of reading	Torque Master Calibration System TSD 2060 <sup>7</sup> With Transducer: #TSD011/20D12 #TSD011 #TSD111
	2 lbf•in to 20 lbf•in	1.8 % of reading	
	5 lbf•in to 60 lbf•in	1.8 % of reading	
	10 lbf•in to 120 lbf•in	1.8 % of reading	
	20 lbf•in to 240 lbf•in	1.8 % of reading	
Torque Multipliers <sup>F</sup>	800 lbf•ft to 8 000 lbf•ft	1.7 % of reading	Torque Master Calibration System <sup>7</sup> TSD 20035-TM/HT With Transducer: #TSD 20011 Torque Master Calibration System TSD 150035- TM/HT TSD 150011
	1 000 lbf•ft to 10 000 lbf•ft	1.7 % of reading	
	2 000 lbf•ft to 20 000 lbf•ft	1.7 % of reading	
	5 000 lbf•ft to 50 000 lbf•ft	1.7 % of reading	
	10 000 lbf•ft to 150 000 lbf•ft	1.7 % of reading	
Torque Transducers <sup>FO</sup>	70 gf•cm to 23 000 gf•cm	0. 013% of reading	10 cm Arm w/ Class "F" Weights <sup>6</sup>
	1 ozf•in to 320 ozf•in	0. 013 % of reading	5 in Arm w/ Class "F" Weights <sup>6</sup>
	0.2 lbf•in to 20 lbf•in	0. 013 % of reading	5 in Arm w/ Class "F" Weights <sup>6</sup>
	0.5 lbf•in to 1 500 lbf•in	0. 014 % of reading	10 in Arm w/ Class "F" Weights <sup>6</sup>
	1 lbf•ft to 300 lbf•ft	0.02 % of reading	12 in Arm w/ Class "F" Weights <sup>6</sup>
	5 lbf•ft to 1 000 lbf•ft	0.02 % of reading	24 in Arm w/ Class "F" Weights <sup>6</sup>
	20 lbf•ft to 2 500 lbf•ft	0. 018 % of reading	30 in Arm w/ Class "F" Weights <sup>6</sup>
	20 lbf•ft to 8 000 lbf•ft	0. 012 % of reading	60 in Arm w/ Class "F" Weights <sup>6</sup>
	100 lbf•ft to 900 lbf•ft	0. 023 % of reading	120 in Arm w/ Class "F" Weights <sup>6</sup>
	200 lbf•ft to 1 800 lbf•ft	0. 023 % of reading	120 in Arm w/ Class "F" Weights <sup>6</sup>
	1 000 lbf•ft to 10 000 lbf•ft	0. 012 % of reading	120 in Arm w/ Class "F" Weights <sup>6</sup>
	2 000 lbf•ft to 20 000 lbf•ft	0. 012 % of reading	120 in Arm w/ Class "F" Weights <sup>6</sup>



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Torque Transducers <sup>F</sup>	500 lbf•ft to 3 500 lbf•ft	0.037 % of reading	2x120 in Arms w/ Class "F" Weights <sup>6</sup>
	4 000 lbf•ft to 150 000 lbf•ft	0.015 % of reading	2x120 in Arms w/ Class "F" Weights <sup>6</sup>
	400 lbf•ft to 20 000 lbf•ft	0.03 % of reading	AKO Inline Reaction System <sup>6</sup> with: TSD 20011 Transducer TSD 50011 Transducer TSD 100011 Transducer
	2 000 lbf•ft to 50 000 lbf•ft	0.03 % of reading	
	5 000 lbf•ft to 100 000 lbf•ft	0.03 % of reading	
Torque Wrenches <sup>F</sup>	10 lbf•in to 120 lbf•in	1.2 % of reading	Torque Master Calibration Systems TSD 2060 <sup>7</sup> With Transducer: #TSD011 #TSD111
	20 lbf•in to 240 lbf•in	1.2 % of reading	
	60 lbf•in to 600 lbf•in	1.2 % of reading	
	100 lbf•in to 1 200 lbf•in	1.2 % of reading	
	5 lbf•ft to 50 lbf•ft	1.2 % of reading	
	10 lbf•ft to 100 lbf•ft	1.2 % of reading	Torque Master Calibration Systems TSD 2060 <sup>7</sup> With Transducer: #TSD1011 #TSD4011
	20 lbf•ft to 200 lbf•ft	1.2 % of reading	
	25 lbf•ft to 300 lbf•ft	1.2 % of reading	
	50 lbf•ft to 600 lbf•ft	1.2 % of reading	
	100 lbf•ft to 1 000 lbf•ft	1.2 % of reading	
	250 lbf•ft to 2 500 lbf•ft	1.2 % of reading	
	400 lbf•ft to 4 000 lbf•ft	1.2 % of reading	
Torque Wrenches – Hydraulic/Pneumatic <sup>F</sup>	200 lbf•ft to 20 000 lbf•ft	0.32 % of reading	Torque Master Calibration System TSD20035-TM/HT with TSD 10KPT Pressure Transducer and TSD 20011 Torque Transducer
Torque Wrenches - Hydraulic <sup>F</sup>	5 000 lbf•ft to 150 000 lbf•ft	0.4 % of reading	TSD20035TM/HT or TSD 150035-TM/HT with TSD 10KPT Pressure Transducer and TSD 20011 and/or TSD 150011 Torque Transducer
Torque Wrenches / Multipliers with Built-In Indicators <sup>F</sup>	60 lbf•ft to 1 500 lbf•ft	1 % of reading	Torque Master Calibration Systems TSD 20035-TM/HT with Transducer TSD 20011 or TSD 10035-TM-BTTS/P with Transducer TSD 10011-L or TSD 2060/3000 with TSD1011 or TSD4011 Transducers
	400 lbf•ft to 2 500 lbf•ft	0.6 % of reading	
	600 lbf•ft to 6 500 lbf•ft	0.6 % of reading	



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

### 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
Weights Field Service Class F <sup>F</sup>	90.72g (0.2 lb)	18 mg (0.000 04 lb)	Mettler Toledo ML 4002E Balance <sup>8</sup> (4.2 kg max) ASTM Class III Reference Weights <sup>8</sup>
	226.8 g (0.5 lb)	18 mg (0.000 04 lb)	
	453.6 g (1 lb)	18 mg (0.000 04 lb)	
	907.19 g (2 lb)	18 mg (0.000 04 lb)	
	1 360.78 g (3 lb)	18 mg (0.000 04 lb)	
	2 268 g (5 lb)	18 mg (0.000 04 lb)	
	2 268 g (5 lb)	74 mg (1.631 x 10 <sup>-4</sup> lb)	Sartorius IS34EDE-H Weighing Platform <sup>8</sup> (34 kg max) ASTM Class III Reference Weights <sup>8</sup>
	4 535.9 g (10 lb)	74 mg (1.631 x 10 <sup>-4</sup> lb)	
	9 071.85 g (20 lb)	74 mg (1.631 x 10 <sup>-4</sup> lb)	
	22 679.6 g (50 lb)	75 mg (1.63110 <sup>-4</sup> lb)	

### 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
Calibration (AKO Moment) Arms <sup>F</sup>	5 in	5.8 x 10 <sup>-4</sup> in	Micrometer Rods Dial Indicator
	10 in	5.8 x 10 <sup>-4</sup> in	
	12 in	5.8 x 10 <sup>-4</sup> in	
	24 in	6.2 x 10 <sup>-4</sup> in	
	30 in	6.2 x 10 <sup>-4</sup> in	
	60 in	6.7 x 10 <sup>-4</sup> in	
	120 in	8 x 10 <sup>-4</sup> in	

- 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.



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*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 F means that the laboratory performs calibration of the indicated parameter at its fixed location. Example: Outside Micrometer<sup>F</sup> would mean that the laboratory performs this calibration at its fixed location.
4. 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.
5. 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.
6. The calibration procedure used for Torque Transducers is ASTM/ANSI E 2624 & E 2428
7. The calibration procedure used for Torque Wrenches/Drivers/ Multipliers ASME B107.300 and ISO 6789
8. The calibration procedure used for Mass is NIST IR 6969 SOP 8
9. The calibration procedure used for Pressure is ASTM/ANSI E 2624