



THE AMERICAN ASSOCIATION FOR  
LABORATORY ACCREDITATION

## ACCREDITED LABORATORY

A2LA has accredited

### CONBRACO CALIBRATION SERVICES

Pageland, SC

for technical competence in the field of

### Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 17<sup>th</sup> day of March 2009.

A handwritten signature in black ink, appearing to read "Peter Abney", written over a horizontal line.

President  
For the Accreditation Council  
Certificate Number: 1736.01  
Valid to: March 31, 2011



For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005  
& ANSI/NCSL Z540-1994

CONBRACO CALIBRATION SERVICES  
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CALIBRATION

Valid To: March 31, 2011

Certificate Number: 1736.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1</sup>:

I. Dimensional

Parameter/Equipment	Range	Best Uncertainty <sup>2,3</sup> (±)	Comments
Adjustable Thread Rings –  Pitch Diameter	(0 to 6) in	300 μin	GGG-G-61 and master set plugs
Tapered Thread Rings	(0 to 3) in	830 μin	Master plug and indicator
Straight Thread Plugs –  Pitch Diameter  Major Diameter	(0 to 10) in (10 to 20) in  (0 to 8) in (8 to 16) in (16 to 20) in	120 μin 190 μin  (8 + 3.2L) μin (12 + 3.2L) μin (20 + 3.2L) μin	ANSI/ASME B1.2 and B1.16M with thread wires, 3-wire method

Parameter/Equipment	Range	Best Uncertainty <sup>2,3</sup> ( $\pm$ )	Comments
Tapered Thread Plugs – Major Diameter Pitch Diameter	(0 to 3) in (3 to 6) in (0 to 6) in	100 $\mu\text{in}$ 200 $\mu\text{in}$ 260 $\mu\text{in}$	ANSI/ASME B1.20.5 w/ thread wires and sine block
Thread Wires – Threads Per Inch Pitch	(4 to 80) TPI (0.2 to 6) $\mu\text{m}$	24 $\mu\text{in}$ 0.60 $\mu\text{m}$	ANSI/ASME B1.2 ANSI/ASME B1.16M
Cylindrical Measure – Pins, Plain Plugs, Discs, and Plain Rings	(0 to 8) in (8 to 16) in (16 to 20) in	(8 + 3.2L) $\mu\text{in}$ (12 + 3.2L) $\mu\text{in}$ (20 + 3.2L) $\mu\text{in}$	Universal measuring machine
Micrometer Length Standards	(0 to 8) in (8 to 16) in (16 to 20) in	(8 + 3.5L) $\mu\text{in}$ (15 + 3.5L) $\mu\text{in}$ (20 + 3.5L) $\mu\text{in}$	Universal measuring machine
Bore Gages – 2-Point Contact 3-Point Contact	(0.125 to 10) in (0.125 to 3) in	(40 + 0.6R) $\mu\text{in}$ (60 + 0.6R) $\mu\text{in}$	Universal measuring machine Setting rings
Height Gages	(0 to 20) in (20 to 36) in	200 $\mu\text{in}$ 400 $\mu\text{in}$	GGG-C-111C using grade 1 gage blocks

Parameter/Equipment	Range	Best Uncertainty <sup>2,3</sup> ( $\pm$ )	Comments
Micrometers –			
Outside	(0 to 36) in	$(39 + 3.5L) \mu\text{in}$	Gage blocks
Depth	(0 to 12) in	$(45 + 6.7L) \mu\text{in}$	Gage blocks
Inside	(0.5 to 20) in	$(200 + 0.6R) \mu\text{in}$	Universal measuring machine
Gage Blocks	(0 to 4) in (4 to 20) in	$(3.4 + 2.3L) \mu\text{in}$ $(1.7 + 2.8L) \mu\text{in}$	By mechanical comparison
Calipers	(0 to 20) in (20 to 48) in	500 $\mu\text{in}$ 550 $\mu\text{in}$	Gage blocks
Indicators	(0 to 0.005) in (0.005 to 4) in	6 $\mu\text{in}$ $(20 + 0.6R) \mu\text{in}$	Universal measuring machine

## II. Mechanical

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> ( $\pm$ )	Comments
Torque Wrench	0.5 in·lb to 1100 ft·lb	0.65 % of full scale of unit under test	Torque tester
Pressure Gauges –			
Hydraulic	(0.2 to 10 000) psig	0.06 % of full scale of unit under test	Deadweight pressure testers

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> ( $\pm$ )	Comments
Pressure Gauges (cont) – Pneumatic	(0 to 300) psig	0.63 % of full scale of unit under test	Deadweight pressure testers

<sup>1</sup> This laboratory offers commercial calibration service.

<sup>2</sup> “Best Uncertainty” is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards of nearly ideal measuring equipment. Best uncertainties represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of  $k = 2$ . The best uncertainty of a specific calibration performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer’s device and to influences from the circumstances of the specific calibration.

<sup>3</sup> In the statement of best uncertainty,  $L$  is the numerical value of the nominal length of the device measured in inches;  $R$  is the numerical value of the resolution of the device in microinches.