THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

NELS JORGENSON & CO.

St. Clair Shores, MI

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 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 January 2009*).

AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION
CORPORATE SEAL 1978
DISTRICT OF COLUMBIA
A2LA

Presented this 20th day of February 2009.

President
For the Accreditation Council
Certificate Number 1989.01
Valid to December 31, 2010

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

<u>SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005</u>

NELS JORGENSON & CO.
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Saint Clair Shores, MI 48080-0347
Kevin Asmus Phone: 586 774 6600

CALIBRATION

Valid To: December 31, 2010 Certificate Number: 1989.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1]:

I. Mechanical

Parameter/Equipment	Range	Best Uncertainty[2] (±)	Comments
Force[3] –			
Universal Testing Machines, Lloyd Instruments Test Frames			
Compression	(0 to 10) N (0 to 50) N (0 to 100) N (0 to 250) N	0.012 N 0.006 N 0.03 N 0.09 N	Class 6 dead weights
	(0 to 500) N (0 to 1000) N (0 to 2500) N (0 to 5000) N (0 to 10 000) N (0 to 20 000) N (0 to 30 000) N (0 to 50 000) N	0.15 N 0.54 N 0.89 N 1.6 N 2.8 N 5.7 N 5.7 N 5.9 N	Admet display with load cells
Gauges	(0 to 250) g (0 to 2) lbf (0 to 5) lbf (0 to 10) lbf (0 to 50) lbf (0 to 100) lbf (0 to 200) lbf (0 to 500) lbf	0.06 gf 0.001 lbf 0.003 lbf 0.004 lbf 0.01 lbf 0.03 lbf 0.02 lbf 0.12 lbf	Class 6 dead weights

Parameter/Equipment	Range	Best Uncertainty[2, 3] (±)	Comments
Force[3] – (cont)			
Tension	(0 to 10) N (0 to 50) N (0 to 100) N (0 to 250) N	0.012 N 0.006 N 0.03 N 0.09 N	Class 6 dead weights
	(0 to 500) N (0 to 1000) N (0 to 2500) N (0 to 5000) N (0 to 10 000) N (0 to 20 000) N (0 to 30 000) N (0 to 50 000) N	0.11 N 0.19 N 1.3 N 1.5 N 2.2 N 9.7 N 9.6 N 9.9 N	Admet display with load cells
Compression/Tension	(0 to 500) lbf (0 to 1000) lbf (0 to 2000) lbf (0 to 5000) lbf (0 to 10 000) lbf	0.4 lbf 0.4 lbf 0.8 lbf 2.7 lbf 4.9 lbf	Admet display with load cells using Dillon DTM manual test stand
Dial gauge (Compression Only)	(0 to 500) lbf (0 to 1000) lbf (0 to 2000) lbf (0 to 5000) lbf	2.9 lbf 5.8 lbf 12 lbf 29 lbf	Admet display with load cells using Dillon DTM manual test stand

[1] This laboratory offers commercial and field calibration services.

[2] "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.

[3] Field calibration service is available for this calibration and this laboratory meets A2LA *R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the uncertainties achievable on a customer's site can normally be expected to be larger than the Best Measurement Capabilities (BMC) that the accredited laboratory has been assigned as Best Uncertainty on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the calibration uncertainty being larger than the BMC.