



Certificate of Mass Calibration

Montana Department of Labor & Industry Metrology Laboratory
 2801 N Cooke St. Helena, Montana 59601
 (406)449-2582 FAX (406)443-8163

| | | |
|---|-----------------------------------|---------------------------------|
| Company Name & Address: Joe Ordile Fairbanks Scales 4850 Broadway Denver, CO 80216 | Date of Test: 2/28/2017 | Test Number: 2017-038 |
| Serial Number: Assorted 1000's and 3000 Cart | | |

All results contained within this report only relate to the item(s) listed in this report. This calibration report must not be used to claim product endorsement by the State of Montana or any other government agency.

Date these weights were received: 2/27/2017
Description and condition of artifacts received: Cart and weights have been recently cleaned and painted.

Environmental Conditions at Time of Test:

| Temperature °C | | Pressure mmHg | Relative Humidity % | |
|----------------|-------|------------------|---------------------|-------|
| Start | End | Duration of Test | Start | End |
| 20.36 | 22.31 | 662.94 | 35.21 | 36.57 |

| Conventional Mass Value: | | Assumed Density of Artifacts: | | 7.2 g/cm ³ | | |
|---------------------------------|------------|--------------------------------------|-------------|-----------------------|--------------------------|----------|
| Nominal | Serial No. | As Found (g) | As Left (g) | Uncertainty ± (g) | NIST 105-1 Class F ± (g) | k factor |
| 3000 lb | 9822 | -532 | 16 | 8 | 454 | 2.13 |
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Standards and Procedures used for testing:

The Standards used for this comparison are continuously monitored by a measurement control program for ensuring continued accuracy and traceability within the level of uncertainty reported. These standards were calibrated by a nationally accredited laboratory on 10/2009 (Reports on File) and are traceable to the SI. The test number listed above is traceable to National Standards through an unbroken chain of comparison each having stated uncertainties. This information is on file and available upon request.

Procedure Used: SOP-7

All procedures used in this laboratory are in accordance to National Institute of Standards and Technology Intermediate Report (NISTIR) 6969, issue February 2012, and the *Quality Assurance of Metrological Measurements*.

Traceability Statement:

The equipment in this report has been compared to the standards of the State of Montana. The States equipment complies with the specifications and tolerances listed in NIST 105-1 Class F tolerances. The standards of the State of Montana are traceable to the SI through the National Institute of Standards and Technology.

Uncertainty Statement:

The expanded uncertainty presented in this report is consistent with the 1993 *ISO Guide to Expression of Uncertainty in Measurement* and follows *NISTIR 6969*, issue February 2012, SOP-29. The reported uncertainty is calculated by combining the uncertainty of the standard used, with the uncertainty of the measurement process in a root sum square formula using a calculated k factor, for a confidence level of 95.45%.

State Metrologist: Dave Fraser

David Fraser

Email: dafraser@mt.gov

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JUN 19 2017

ND Public
Service
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| Nominal | Serial No. | As Found (g) | As Left (g) | Uncertainty ± (g) | NIST 105-1 Class F ± (g) | k factor |
|---------|------------|--------------|-------------|-------------------|--------------------------|----------|
| 1000 lb | 582 | -0.9 | -0.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 578 | -23.9 | -23.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 590 | -0.9 | -0.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 588 | -37.9 | -37.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 589 | -63.9 | -0.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 584 | -33.9 | -33.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 583 | -66.9 | -31.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 581 | -62.9 | -13.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 585 | -66.9 | -3.9 | 5.5 | 45 | 2.13 |

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|---------|------------|--------------|-------------|-------------------|--------------------------|----------|
| 1000 lb | 586 | -0.9 | -0.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 580 | -24.9 | -24.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 591 | -27.9 | -27.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 587 | 7.1 | 7.1 | 5.5 | 45 | 2.13 |
| 1000 lb | 592 | -70.9 | -15.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 596 | -48.9 | -48.9 | 5.5 | 45 | 2.13 |
| 1000 lb | 579 | 3.1 | 3.1 | 5.5 | 45 | 2.13 |
| 500 lb | 1 | 5.6 | 5.6 | 5.6 | 23 | 2.13 |
| 500 lb | 2 | -5.4 | -5.4 | 5.6 | 23 | 2.13 |

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United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

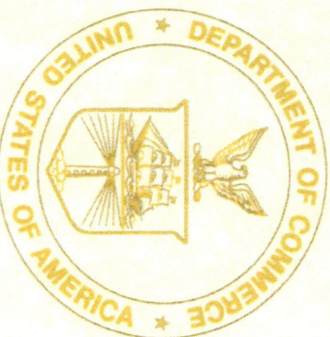
Montana

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.


The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

Scope

| Mass Echelon III | Volume Transfer, II |
|---------------------|-----------------------|
| 30 kg to 1 mg | 1500 gal to 5 gal |
| 3000 lb to 0.001 lb | 100 gal to 25 gal LPG |
| 8 oz to 0.03125 oz | |
| Weight Carts | |
| 5000 lb to 2000 lb | |



2017


Georgia L. Harris, Acting Chief
NIST Office of Weights and Measures

Effective Dates: 2017-01-01 to 2017-12-31