

Vermont Weights & Measures Metrology Lab

TEST REPORT

3000 lb Weight Cart

Submitted by:

Advanced Scale
13 Delta Drive Unit 6
Londonderry, NH 03053-2372
603-626-0242

Vermont Test Number: VT20-157

Date of Test: May 27, 2020
Date Received: May 22, 2020
Manufacturer: Kanawha Scales & Systems
Model: 3K
Serial Number: 092112K
Nominal Mass: 3000 lb

The weight cart described above have been compared to the standards of the State of Vermont, by NISTIR 6969, SOP 33 (2019) with SOP 4 Modifications using the SXXS method, and have been found at time of test, or been adjusted, to meet the tolerance requirements stated in NIST Handbook 105-8 Specifications and Tolerances for Weight Carts (2019). Weights carts are considered in tolerance when the absolute value of the conventional mass correction plus the uncertainty is less than or equal to the specified tolerance. Carts received in an out of tolerance condition show a "Conventional Mass as Submitted" value.

Conventional Mass: 3000.05 lb
Conventional Mass Correction: 0.05 lb
Conventional Mass Correction: 21 grams
Uncertainty: 62 grams
Tolerance: 480 grams
Conventional Mass as Submitted:

Environmental Conditions During Calibration

Temperature: 21.6 °C to 21.7 °C
Relative Humidity: 52.9 % to 53.9 %
Barometric Pressure: 730.35 mmHg to 730.95 mmHg

Technician: Scott Dolan
Calibration Due: Not Specified

The uncertainties shown are expressed as the sum of the following sources of inaccuracy; (1) Type B, systematic uncertainties relative to the reference standard and procedure used, and (2) Type A, random uncertainties determined by the standard deviation of the measurement process. Type A and Type B uncertainties are combined by the root sum squared method and multiplied by a coverage factor of 2.25 ($k=2.25$) for a 95 % confidence interval.

Standards of the state of Vermont are traceable to the SI and National Institute of Standards and Technology (NIST). The Vermont laboratory is recognized by NIST, WMD under the "Metrology Laboratory Program" for mass calibrations at accuracy level Echelon III.

SI conversion - 1 lb is equal to 0.45359237 kg

Calibration Performed at:
163 Admin Drive
Randolph Center, VT 05061

Scott Dolan
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Adobe Acrobat version:
2020.009.20065

Scott Dolan, Consumer Protection Specialist



Vermont Weights & Measures Metrology Lab
INSPECTION CHECKLIST
 3000 lb Weight Cart

Submitted by:

Advanced Scale
 13 Delta Drive Unit 6
 Londonderry, NH 03053-2372
 603-626-0242

Vermont Test Number: VT20-157

Date of Test: May 27, 2020
 Date Received: May 22, 2020
 Manufacturer: Kanawha Scales & Systems
 Model: 3K
 Serial Number: 092112K
 Nominal Mass: 3000 lb
 Nominal Mass Marked: Yes
 Powered by: Gasoline Motor

Fluid Levels:	Sealed
Engine oil: Full	No
Hydraulic Fluid: Below Gauge	Yes
Battery Acid: Good	Yes
Liquid Fuel: Full	Yes

Controls:	Functioning Properly
Service Break: Yes	
Parking Break: Yes	
Remote: N/A	

Adjustment Cavity:
Accessible: Yes
Sealed: Yes
Approximate Capacity: 150 lb

Tires:
Number of Axles: 2
Number of Tires: 4
Size of Tires: 21" Diameter
Sealed Wheel Bearings: No

General Condition of Weight Cart:
Cart is in generally good condition with some worn paint. Make sure to wipe off any excess grease when greasing fittings.
Seal Numbers VT W&M 002325 and 002331.

Fluid drain tubes don't extend beyond body
 Drain holes present to prevent water accumulation
 Railings permanently fixed or solid

Any maintenance, repairs, replacement of parts, or damage to weight cart or its components will likely result in an out-of-tolerance condition; therefore, maintenance or replacement of components such as batteries, tires, filters, or other items listed on the checklist, require calibration of the weight cart prior to subsequent use.

End of Test Report



Vermont Weights and Measures Metrology Laboratory
Test Report

Issued To:

Advanced Scale
13 Delta Drive Unit 6
Londonderry, NH 03053-2372
603-626-0242

Date of Receipt: May 22, 2020

Vermont Test Number: VT20-158

Date of Test: May 26, 2020

Report of Test for Item (Make/Model/Serial Number(s)/#Pieces):

N/A/Class F Stainless Steel Cart Weights/092112/9 - 8 oz

The mass standards described above have been compared to the standards of the State of Vermont, by NISTIR 6969, SOP 8 (2019), and have been found at time of test, or been adjusted, to meet the tolerances stated in NIST Handbook 105-1 (1990) Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures. Standards of the state of Vermont are traceable to the SI and National Institute of Standards and Technology (NIST). The Vermont Laboratory is recognized by NIST, under the Laboratory Metrology Program at Mass Echelon III. The mass standards described above were found to have a mass value at the time of test as indicated in the following tabulation. Weights are considered in tolerance when the absolute value of the conventional mass correction plus the uncertainty is less than or equal to the specified tolerance. Weights received in an out of tolerance condition show a value in the "before adjustment" column.

The uncertainties shown are expressed as the sum of the following sources of inaccuracy; (1) Type B, systematic uncertainties relative to the reference standard and procedure used, and (2) Type A, random uncertainties determined by the standard deviation of the measurement process. Type A and Type B uncertainties are combined by the root sum squared method and multiplied by a coverage factor of k (in chart) for an approximate 95 % confidence interval.

Environmental conditions at time of test:

Temperature: 20.3 °C to 20.8 °C

Relative Humidity: 56.4 % to 57.8 %

Barometric Pressure: 730.85 mmHg to 730.95 mmHg

Mass Comparator: MT XP5003S

Technician: Scott Dolan



Nominal & Marking	Conventional Mass Correction Before Adjustment	Conventional Mass Correction As Left	Uncertainty	NIST Class F Tolerance	Units	<i>k</i> Factor
8 oz 1		9.4	1.9	45	mg	2.03
8 oz 2		10.4	1.9	45	mg	2.03
8 oz 3		9.4	1.9	45	mg	2.03
8 oz 4		13.4	1.9	45	mg	2.03
8 oz 5		18.4	1.9	45	mg	2.03
8 oz 6		13.4	1.9	45	mg	2.03
8 oz 7		16.4	1.9	45	mg	2.03
8 oz 8		21.4	1.9	45	mg	2.03
8 oz 9		12.4	1.9	45	mg	2.03

The following weights were adjusted: None

Calibration Performed at:
163 Admin Drive
Randolph Center, VT 05061

Additional documentation material available on request.

Scott Dolan

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Scott Dolan/Vermont Agency of Agriculture
Consumer Protection Section/Metrologist
Consumer Protection Specialist

End of Report