South Dakota Department of Public Safety
Office of Weights and Measures
Metrology Lab
Lab: 1500 N Garfield – E. Truck Bypass Phone: 605-773-3170
Office: 118 West Capitol Avenue Phone: 605-773-3697
Pierre SD 57501

REPORT OF CALIBRATION

LAB TEST NUMBER: MP3468 Amended
DATE OF REPORT: 11/09/2016
DATE RECEIVED: 11/07/2016
DATE OF TEST: 11/07-09/2016

Submitted By: Webster Scales
Contact: Roger Shoemaker
Mailing Address: Box 127
City, State, Zip: Webster, SD 57274
Phone: 605-345-3881
S/A Number: 2

Standards Submitted:

20 - 1000 lb weights
2 - weight kits
2 - 4000 lb weight carts
20 - 50 lb weights

Uncertainty Statement: The combined standard uncertainty includes the standard uncertainty reported for the standard and the standard uncertainty for the measurement process. The combined standard uncertainty is multiplied by a coverage factor *k* to provide an expanded uncertainty which defines an interval having a level of confidence of approximately 95 percent. The expanded uncertainty presented in this report is consistent with the 1995 ISO/IEC Guide to the Expression of Uncertainty in Measurement. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

Traceability statement:
The Standards of the SD Metrology Laboratory used for comparison are traceable to the International System of Units (SI) through the National Institute of Standards and Technology. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only.

This document does not represent or imply endorsement by NIST Office of Weights and Measures or any agency of the State and/or national governments. The reported test values relate only to the observations made at the time and conditions of the test. This report may not be reproduced, except in full without the written approval of this laboratory. The client must not use this document to claim product endorsement by this laboratory.

Ron Peterson, Metrologist

02/15/17
Date

Original report referenced a 2000 lb weight cart

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Lab: 1500 N Garfield – E. Truck Bypass Phone: 605-773-3170
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Submitted by:	Webster Scales	**Report Number:**	IP3468 Amended
Mailing Address:	Box 127	**Date Received:**	11/07/16
City, State, Zip:	Webster, SD 57274	**Date tested:**	11/09/16
Manufacturer:	Weight Carts Inc	**Condition of Cart:**	GOOD
Serial Number:	090705A	**Temperature (c):**	19.7
Test Method Used:	SOP 33 Calibrations of Weight Carts, Jan 2016	**Humidity:**	34.7%
Nominal (lb):	4000	**Pressure (mm/Hg):**	719.7
Tolerance (lb):	1.25		

The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory.

As Found (lb)	As Left (lb)	Uncertainty-lb. (k=)
-1.32	-0.05	0.29

The weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted, as needed and noted above, as close as possible to zero error. All fluid levels must be maintained as close to reference levels as possible during use. Any maintenance, repairs 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, etc. will require calibration of the weight cart prior to subsequent use.

Test equipment used include recently calibrated weights and a Sartorius PR 6246/33 load cell.

The above weight cart was compared with standards of the State of South Dakota, which are traceable the National Institute of Standards and Technology(NIST) Weights and Measures Division. The assigned test number provides documented evidence for measurement traceability.

Ron Peterson, Metrologist

11/09/2016
Date of Report

Original report referenced a 2000 lb weight cart.

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Submitted by:	Webster Scales	**Report Number:**	IP3468 Amended
Mailing Address:	Box 127	**Date Received:**	11/07/16
City, State, Zip:	Webster, SD 57274	**Date tested:**	11/09/16
Manufacturer:	Weight Carts Inc	**Condition of Cart:**	GOOD
Serial Number:	090705B	**Temperature (c):**	19.7
Test Method Used:	SOP 33 Calibrations of Weight Carts, Jan 2016	**Humidity:**	34.7%
Nominal (lb):	4000	**Pressure (mm/Hg):**	719.7
Tolerance (lb):	1.25		

The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory.

As Found (lb)	As Left (lb)	Uncertainty-lb. (k=)
-2.98	-0.02	0.29

The weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted, as needed and noted above, as close as possible to zero error. All fluid levels must be maintained as close to reference levels as possible during use. Any maintenance, repairs 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, etc. will require calibration of the weight cart prior to subsequent use.

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Ron Peterson, Metrologist

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Submitted by:	Webster Scales	**Report Number:**	MP3468 Amended
Mailing Address:	Box 127	**Date Received:**	11/07/16
City, State, Zip:	Webster, SD 57274	**Date tested:**	11/08/16
Artifacts Submitted	1000 lb weights	**Condition of Weights:**	GOOD
		Temperature (c):	20.8
Test Method Used:	SOP 8/ MODIFIED SUB, Jun 2015	**Humidity:**	51.3
Equipment Used:	Russell Balance/ Vaisala PTU301	**Pressure (mm/Hg):**	725.9

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.

Standards Used: SD Lab 1000 lb and/or 500 lb Working Standards.

The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory. These weights were not screened for magnetism and effects of magnetism is not included in the uncertainties.

Nominal	Serial Number	Correction As Found		Correction As Left		Tolerance	Uncertainty	*k*
1000 lb	1-11	-0.136 lb	-61.6 g	0.001 lb	0.7 g	45 g	5.9 g	2.04
1000 lb	2-05	-0.073 lb	-33.0 g	-0.006 lb	-2.7 g	45 g	5.9 g	2.04
1000 lb	3-05	-0.169 lb	-76.8 g	-0.001 lb	-0.6 g	45 g	5.9 g	2.04
1000 lb	3-06	0.005 lb	2.4 g	0.005 lb	2.4 g	45 g	5.9 g	2.04
1000 lb	3-11	-0.139 lb	-63.1 g	0.002 lb	1.0 g	45 g	5.9 g	2.04
1000 lb	4-05	-0.152 lb	-68.8 g	0.003 lb	1.3 g	45 g	5.9 g	2.04
1000 lb	5-05	-0.320 lb	-145.0 g	0.002 lb	0.9 g	45 g	5.9 g	2.04
1000 lb	8-06	-0.055 lb	-24.8 g	0.002 lb	0.9 g	45 g	5.9 g	2.04
1000 lb	9-05	-0.267 lb	-120.9 g	0.003 lb	1.6 g	45 g	5.9 g	2.04
1000 lb	10-06	-0.110 lb	-49.8 g	0.002 lb	0.8 g	45 g	5.9 g	2.04
1000 lb	10-11	-0.065 lb	-29.5 g	-0.001 lb	-0.3 g	45 g	5.9 g	2.04
1000 lb	11-05	-0.108 lb	-49.1 g	0.005 lb	2.2 g	45 g	5.9 g	2.04
1000 lb	11-06	-0.087 lb	-39.5 g	0.004 lb	1.9 g	45 g	5.9 g	2.04
1000 lb	12-05	-0.195 lb	-88.6 g	0.003 lb	1.4 g	45 g	5.9 g	2.04
1000 lb	12-11	-0.039 lb	-17.5 g	-0.039 lb	-17.5 g	45 g	5.9 g	2.04
1000 lb	13-05	-0.161 lb	-73.2 g	0.000 lb	0.1 g	45 g	5.9 g	2.04
1000 lb	13-11	-0.103 lb	-46.8 g	0.001 lb	0.4 g	45 g	5.9 g	2.04
1000 lb	20-06	-0.039 lb	-17.5 g	-0.039 lb	-17.5 g	45 g	5.9 g	2.04
1000 lb	20-11	-0.094 lb	-42.6 g	-0.001 lb	-0.6 g	45 g	5.9 g	2.04
1000 lb	21-11	-0.233 lb	-105.6 g	0.005 lb	2.2 g	45 g	5.9 g	2.04

Ron Peterson, Metrologist

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Submitted by:	Webster Scales	**Report Number:**	MP3468 Amended
Mailing Address:	Box 127	**Date Received:**	11/07/16
City, State, Zip:	Webster, SD 57274	**Date tested:**	11/07/16
Artifacts Submitted	50 lb weights	**Condition of Weights:**	GOOD
		Temperature (c):	20.6
Test Method Used:	SOP 8/ MODIFIED SUB, Jun 2015	**Humidity:**	49.5%
Equipment Used:	Mettler KA-30/ Vaisala PTU301	**Pressure (mm/Hg):**	719.6

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.

Standards Used: SD Lab Working Standards.

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Nominal	Serial Number	Correction As Found	Correction As Left	Tolerance	Uncertainty	*k*
50 lb	02	166 mg	166 mg	2300 mg	283 mg	2.04
50 lb	06	-309 mg	-309 mg	2300 mg	283 mg	2.04
50 lb	08	1626 mg	66 mg	2300 mg	283 mg	2.04
50 lb	08B	511 mg	511 mg	2300 mg	283 mg	2.04
50 lb	09	351 mg	351 mg	2300 mg	283 mg	2.04
50 lb	10	-1424 mg	26 mg	2300 mg	283 mg	2.04
50 lb	12	2601 mg	-19 mg	2300 mg	283 mg	2.04
50 lb	13	-394 mg	-394 mg	2300 mg	283 mg	2.04
50 lb	15	2026 mg	-19 mg	2300 mg	283 mg	2.04
50 lb	15	-814 mg	-814 mg	2300 mg	283 mg	2.04
50 lb	16	676 mg	676 mg	2300 mg	283 mg	2.04
50 lb	17	-84 mg	-84 mg	2300 mg	283 mg	2.04
50 lb	18	1161 mg	1161 mg	2300 mg	283 mg	2.04
50 lb	19	-1009 mg	-1009 mg	2300 mg	283 mg	2.04
50 lb	20	-5634 mg	31 mg	2300 mg	283 mg	2.04
50 lb	2.10	-924 mg	-924 mg	2300 mg	283 mg	2.04
50 lb	3.12	2786 mg	41 mg	2300 mg	283 mg	2.04
50 lb	W16	-21759 mg	41 mg	2300 mg	283 mg	2.04
50 lb	A	956 mg	956 mg	2300 mg	283 mg	2.04
50 lb	B	-334 mg	-334 mg	2300 mg	283 mg	2.04

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Submitted by:	Webster Scales	**Report Number:**	MP3468 Amended
Mailing Address:	Box 127	**Date Received:**	11/07/16
City, State, Zip:	Webster, SD 57274	**Date tested:**	11/07/16
Artifacts Submitted	Brass weight kit	**Condition of Weights:**	FAIR
		Temperature (c):	21.2
Test Method Used:	SOP 8/ MODIFIED SUB, Jun 2015	**Humidity:**	48.4
Equipment Used:	Mettler AX 205 DR/ Mettler PR503/ Vaisala PTU301	**Pressure (mm/Hg):**	720.8

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.
Standards Used: SD Lab Working Standards.
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Note: This brass kit is unstable, out of tolerance, and must not be used.

Nominal	Identifier	Correction As Found	Correction As Left	Tolerance Class F	Uncertainty	*k*
1 kg		-81 mg	-81 mg	100 mg	12 mg	2.05
500 g		-60.3 mg	-60.3 mg	70 mg	8.6 mg	2.05
200 g	Reject	-64.2 mg	-64.2 mg	40 mg	5.0 mg	2.05
200 g		-31.5 mg	-31.5 mg	40 mg	5.0 mg	2.05
100 g		-10.3 mg	-10.3 mg	20 mg	2.4 mg	2.05
50 g		-7.1 mg	-7.1 mg	10 mg	1.2 mg	2.05
20 g	Reject	6.49 mg	6.49 mg	4 mg	0.49 mg	2.04
20 g	Reject	5.35 mg	5.35 mg	4 mg	0.49 mg	2.04
10 g	Reject	8.12 mg	8.12 mg	2 mg	0.25 mg	2.04
5 g	Reject	2.74 mg	2.74 mg	1.5 mg	0.39 mg	2.05
2 g		-0.41 mg	-0.41 mg	1.1 mg	0.14 mg	2.05

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Submitted by:	Webster Scales	**Report Number:**	MP3468 Amended
Mailing Address:	Box 127	**Date Received:**	11/07/16
City, State, Zip:	Webster, SD 57274	**Date tested:**	11/07/16
Artifacts Submitted	Weight Kit SN 103111A	**Condition of Weights:**	GOOD
		Temperature (c):	21.2
Test Method Used:	SOP 8/ MODIFIED SUB, Jun 2015	**Humidity:**	48.4
Equipment Used:	Mettler AX 205 DR/ Mettler PR503/ Vaisala PTU301	**Pressure (mm/Hg):**	720.8

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.
Standards Used: SD Lab Working Standards.
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Nominal	Identifier	Correction As Found	Correction As Left	Tolerance Class F	Uncertainty	*k*
1 kg		18 mg	18 mg	100 mg	12 mg	2.05
500 g		21.7 mg	21.7 mg	70 mg	8.6 mg	2.05
500 g	.	17.7 mg	17.7 mg	70 mg	8.6 mg	2.05
200 g		19.6 mg	19.6 mg	40 mg	5.0 mg	2.05
100 g		7.7 mg	7.7 mg	20 mg	2.4 mg	2.05
50 g		3.9 mg	3.9 mg	10 mg	1.2 mg	2.05
20 g		0.59 mg	0.59 mg	4 mg	0.49 mg	2.04
20 g	.	1.24 mg	1.24 mg	4 mg	0.49 mg	2.04
2 g		0.37 mg	0.37 mg	1.1 mg	0.14 mg	2.05
2 g	.	0.34 mg	0.34 mg	1.1 mg	0.14 mg	2.05
1 g		0.13 mg	0.13 mg	0.9 mg	0.12 mg	2.05

End of report

Ron Peterson, Metrologist

11/09/2016
Date of Report

Bauske, Shelly A.

From: Peterson, Ron (DPS) <Ron.Peterson@state.sd.us>
Sent: Wednesday, February 15, 2017 9:47 AM
To: Bauske, Shelly A.
Subject: MP3468 Amended
Attachments: MP3468 Amended.pdf

Shelly,

Attached is the amended report. I believe the reason they did not send you the weight kit report is that I rejected the majority of the kit and they probably took it out of service.

Thanks again,

Ron Peterson
State Metrologist
South Dakota Office of Weights and Measures
Office: 118 W Capitol
Lab: 1500 N Garfield Ave
Pierre, SD 57501
Ron.Peterson@state.sd.us
Lab: 605-773-3170
Cell: 605-280-4572

United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

South Dakota

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

30 kg to 100 mg

1000 lb to 0.001 lb

8 oz to 0.03125 oz

Weight Carts

4000 lb to 2000 lb

Volume Transfer, II

5 gal

2016

Carol T. Hockert, Chief
NIST Office of Weights and Measures

Effective Dates: 2016-01-01 to 2016-12-31

(Rev.: March 2013)