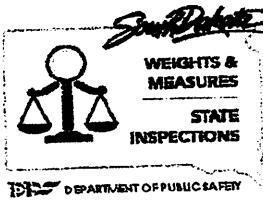


REC'D SEP 20 2017



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: MP3722
DATE OF REPORT: 08/15/2017
DATE RECEIVED: 08/14/2017
DATE OF TEST: 08/16/2017

Submitted By: Capitol Scale Company
Contact: Travis Will
Mailing Address: 3021 Valley Forge Dr
City, State, Zip: Bismarck, ND 58503
Phone: 701-255-1556
S/A Number: 61

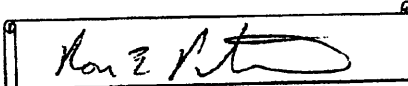
Standards Submitted:

- 20 - 50 lb weights
- 2 - 2000 lb weight carts
- 2 - weight kits (1 metric kit, 1 avoirdupois kit)
- 16 - 1000 lb weights

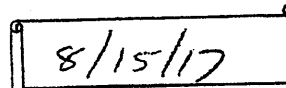
Uncertainty Statement: The combined standard uncertainty includes the standard uncertainty reported for the standard and the standard uncertainty for the measurement process. The combined standard uncertainty is multiplied by a coverage factor k to provide an expanded uncertainty which defines an interval 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




Date

Pages: 8

Filed: 9/20/2017

WM-16-702
Calibration report

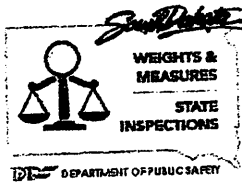
Capital Scale

5

Office of Weights and Measures
118 W. Capitol Ave
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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

Submitted by:	Capitol Scale Company	Report Number:	MP3722
Mailing Address:	3021 Valley Forge Dr	Date Received:	08/14/17
City, State, Zip:	Bismarck, ND 58503	Date tested:	08/15/17
Manufacturer:	Unknown	Condition of Cart:	GOOD
Serial Number:	2016-2 16039	Temperature (c):	24.0
Test Method Used:	SOP 33 Calibrations of Weight Carts, Jan 2016	Humidity:	60.0%
Nominal (lb):	2000	Pressure (mm/Hg):	709.0
Tolerance (lb):	0.50		

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=2.19)
0.94	0.00	0.20

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.

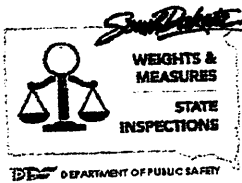
Test equipment used include recently calibrated weights and a Sartorius PR 6246/33 load cell.

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

08/15/2017
Date of Report

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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

Submitted by:	Capitol Scale Company	Report Number:	MP3722
Mailing Address:	3021 Valley Forge Dr	Date Received:	08/14/17
City, State, Zip:	Bismarck, ND 58503	Date tested:	08/15/17
Manufacturer:	Unknown	Condition of Cart:	GOOD
Serial Number:	2016-1 16037	Temperature (c):	24.0
Test Method Used:	SOP 33 Calibrations of Weight Carts, Jan 2016	Humidity:	60.0%
Nominal (lb):	2000	Pressure (mm/Hg):	709.0
Tolerance (lb):	0.50		

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= 2.19)
0.30	0.03	0.20

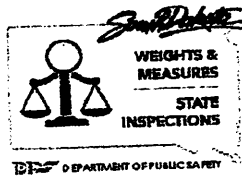
The weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted, as needed and noted above, as close as possible to zero error. All fluid levels must be maintained as close to reference levels as possible during use. Any maintenance,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

08/15/2017
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South Dakota Department of Public Safety
 Office of Weights and Measures
 Metrology Lab
 Lab: 1500 N Garfield - E. Truck Bypass Phone: 605-773-3170
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 Pierre SD 57501

Submitted by:	Capitol Scale Company	Report Number:	MP3722
Mailing Address:	3021 Valley Forge Dr	Date Received:	08/14/17
City, State, Zip:	Bismarck, ND 58503	Date tested:	08/15/17
Artifacts Submitted	1000 lb weights	Condition of Weights:	GOOD
		Temperature (c):	21.1
Test Method Used:	SOP 8/ MODIFIED SUB, Jun 2015	Humidity:	46.1
Equipment Used:	Russell Balance/ Valsala PTU301	Pressure (mm/Hg):	710.3

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.

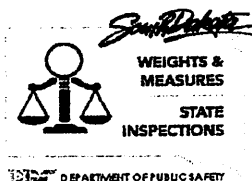
The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory. These weights were not screened for magnetism and effects of magnetism is not included in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

Nominal	Serial Number	Correction As Found	Correction As Left	Tolerance	Uncertainty	k
1000 lb	13.1	-0.040 lb -18.3 g	-0.040 lb -18.3 g	45 g	5.9 g	2.04
1000 lb	13.2	-0.019 lb -8.5 g	-0.019 lb -8.5 g	45 g	5.9 g	2.04
1000 lb	13.3	-0.059 lb -26.6 g	0.000 lb -0.2 g	45 g	5.9 g	2.04
1000 lb	13.4	-0.086 lb -30.1 g	0.003 lb 1.5 g	45 g	5.9 g	2.04
1000 lb	13.5	0.035 lb 15.7 g	0.036 lb 15.7 g	45 g	5.9 g	2.04
1000 lb	13.6	-0.048 lb -22.0 g	-0.048 lb -22.0 g	45 g	5.9 g	2.04
1000 lb	13.7	0.019 lb 8.4 g	0.019 lb 8.4 g	45 g	5.9 g	2.04
1000 lb	13.8	0.021 lb 9.5 g	0.021 lb 9.5 g	45 g	5.9 g	2.04
1000 lb	13.9	-0.005 lb -2.2 g	-0.005 lb -2.2 g	45 g	5.9 g	2.04
1000 lb	16.1	-0.026 lb -11.8 g	-0.026 lb -11.8 g	45 g	5.9 g	2.04
1000 lb	16.2	0.018 lb 8.2 g	0.018 lb 8.2 g	45 g	5.9 g	2.04
1000 lb	16.3	0.054 lb 24.5 g	0.054 lb 24.5 g	45 g	5.9 g	2.04
1000 lb	16.4	0.050 lb 22.8 g	0.050 lb 22.8 g	45 g	5.9 g	2.04
1000 lb	16.5	0.001 lb 0.6 g	0.001 lb 0.6 g	45 g	5.9 g	2.04
1000 lb	16.6	0.005 lb 2.5 g	0.005 lb 2.5 g	45 g	5.9 g	2.04
1000 lb	16.7	0.034 lb 15.3 g	0.034 lb 15.3 g	45 g	5.9 g	2.04


 Ron Peterson, Metrologist

08/15/2017
 Date of Report

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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


Submitted by: Capitol Scale Company Report Number: MP3722 Amended
Mailing Address: 3021 Valley Forge Dr Date Received: 08/14/17
City, State, Zip: Bismarck, ND 58503 Date tested: 08/15/17
Artifacts Submitted: 50 lb cast weights Condition of Weights: GOOD
Temperature (c): 21.3
Test Method Used: SOP 8/ MODIFIED SUB, Jun 2015 Humidity: 45.4%
Equipment Used: Mettler KA-30/ Vaisala PTU301 Pressure (mm/Hg): 711.0

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

Standards Used: SD Lab 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
50 lb	5	-5954 mg	11 mg	2300 mg	283 mg	2.04
50 lb	17	-6394 mg	-74 mg	2300 mg	283 mg	2.04
50 lb	21	-2064 mg	6 mg	2300 mg	283 mg	2.04
50 lb	25	1251 mg	1251 mg	2300 mg	283 mg	2.04
50 lb	38	-3434 mg	1 mg	2300 mg	283 mg	2.04
50 lb	42	-2269 mg	-4 mg	2300 mg	283 mg	2.04
50 lb	59	-5694 mg	-59 mg	2300 mg	283 mg	2.04
50 lb	67	-5289 mg	-24 mg	2300 mg	283 mg	2.04
50 lb	68	-709 mg	-709 mg	2300 mg	283 mg	2.04
50 lb	71	-44 mg	-44 mg	2300 mg	283 mg	2.04
50 lb	72	-6014 mg	-34 mg	2300 mg	283 mg	2.04
50 lb	73	-6684 mg	1 mg	2300 mg	283 mg	2.04
50 lb	76	-3854 mg	-9 mg	2300 mg	283 mg	2.04
50 lb	77	-3964 mg	-64 mg	2300 mg	283 mg	2.04
50 lb	79	-2604 mg	-54 mg	2300 mg	283 mg	2.04
50 lb	A	-3774 mg	11 mg	2300 mg	283 mg	2.04
50 lb	B	-3894 mg	-39 mg	2300 mg	283 mg	2.04
50 lb	C	-1204 mg	-1204 mg	2300 mg	283 mg	2.04
50 lb	D	-68634 mg	61 mg	2300 mg	283 mg	2.04
50 lb	E	-289784 mg	51 mg	2300 mg	283 mg	2.04

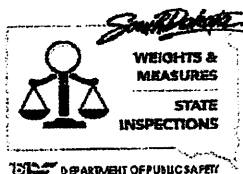

Ron Peterson, Metrologist

08/15/2017
Date of Report

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REC'D SEP 20 2017



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

Submitted by: Capitol Scale Company Report Number: MP3722
Mailing Address: 3021 Valley Forge Dr Date Received: 08/14/17
City, State, Zip: Bismarck, ND 58503 Date tested: 08/15/17
Artifacts Submitted: 22 Piece avoidupois kit Condition of Weights: FAIR
SN 11905C Temperature (c): 21
Test Method Used: SOP 8/ MODIFIED SUB. Jun 2015 Humidity: 44.7
Equipment Used: Mettler AX 205 DR/ Mettler PR503/ Vaisala PTU301 Pressure (mm/Hg): 709.7

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.
Standards Used: SD Lab 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	Identifier	Correction As Found	Correction As Left	Tolerance Class F	Uncertainty	k
5 lb	1	-20.900 mg	-20.9 mg	230 mg	28 mg	2.04
5 lb	2	20.100 mg	20.1 mg	230 mg	28 mg	2.04
5 lb	3	14.100 mg	14.1 mg	230 mg	28 mg	2.04
5 lb	4	64.100 mg	64.1 mg	230 mg	28 mg	2.04
5 lb	5	71.100 mg	71.1 mg	230 mg	28 mg	2.04
1 lb	1	-22.400 mg	-22.4 mg	70 mg	9 mg	2.04
1 lb	2	-12.400 mg	-12.4 mg	70 mg	9 mg	2.04
1 lb	3	-23.400 mg	-23.4 mg	70 mg	9 mg	2.04
1 lb	4	-12.400 mg	-12.4 mg	70 mg	9 mg	2.04
1 lb	5	-10.400 mg	-10.4 mg	70 mg	9 mg	2.04
8 oz		23.100 mg	23.1 mg	45 mg	6 mg	2.04
4 oz		3.303 mg	3.3 mg	23 mg	3 mg	2.05
2 oz		3.927 mg	3.9 mg	11 mg	1 mg	2.05
1 oz		3.727 mg	3.7 mg	5.4 mg	1 mg	2.04
1/2 oz		-0.890 mg	-0.9 mg	2.8 mg	0 mg	2.04
1/4 oz		0.328 mg	0.3 mg	1.7 mg	0 mg	2.04
1/8 oz		0.784 mg	0.8 mg	1.3 mg	0 mg	2.04
0.1 lb		0.070 mg	0.1 mg	9.1 mg	1 mg	2.05
0.05 lb		2.430 mg	2.4 mg	4.5 mg	1 mg	2.05
0.05 lb		1.560 mg	1.6 mg	4.5 mg	1 mg	2.05
0.02 lb		-0.225 mg	-0.2 mg	1.8 mg	0 mg	2.05
0.02 lb		-0.405 mg	-0.4 mg	1.8 mg	0 mg	2.05

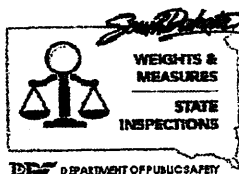

Ron Peterson, Metrologist

08/15/2017
Date of Report

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REC'D SEP 20 2017



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

Submitted by:	Capitol Scale Company	Report Number:	MP3722
Mailing Address:	3021 Valley Forge Dr	Date Received:	08/14/17
City, State, Zip:	Bismarck, ND 58503	Date tested:	08/15/17
Artifacts Submitted	21 Piece metric Kit	Condition of Weights:	GOOD
	SN 11111A	Temperature (c):	21
Test Method Used:	SOP 8/ MODIFIED SUB, Jun 2015	Humidity:	44.7
Equipment Used:	Mettler AX 205 DR/ Mettler PR503/ Vaisala PTU301	Pressure (mm/Hg):	709.7

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.
Standards Used: SD Lab 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	Identifier	Correction As Found	Correction As Left	Tolerance Class F	Uncertainty	k
5 kg	1	163 mg	163 mg	500 mg	61 mg	2.08
5 kg	2	140 mg	140 mg	500 mg	61 mg	2.08
2 kg	1	35 mg	35 mg	200 mg	24 mg	2.05
2 kg	2	42 mg	42 mg	200 mg	24 mg	2.05
1 kg		49 mg	49 mg	100 mg	12 mg	2.05
500 g	1	20.7 mg	20.7 mg	70 mg	8.6 mg	2.05
500 g	2	19.7 mg	19.7 mg	70 mg	8.6 mg	2.05
500 g	3	12.7 mg	12.7 mg	70 mg	8.6 mg	2.05
500 g	4	18.7 mg	18.7 mg	70 mg	8.6 mg	2.05
500 g	5	17.7 mg	17.7 mg	70 mg	8.6 mg	2.05
200 g	1	9.7 mg	9.7 mg	40 mg	5.0 mg	2.05
200 g	2	9.3 mg	9.3 mg	40 mg	5.0 mg	2.05
100 g		7.6 mg	7.6 mg	20 mg	2.4 mg	2.05
50 g		1.8 mg	1.8 mg	10 mg	1.2 mg	2.05
20 g		1.77 mg	1.77 mg	4 mg	0.49 mg	2.04
20 g		1.24 mg	1.24 mg	4 mg	0.49 mg	2.04
10 g		0.45 mg	0.45 mg	2 mg	0.25 mg	2.04
5 g		0.73 mg	0.73 mg	1.5 mg	0.39 mg	2.05
2 g		0.27 mg	0.27 mg	1.1 mg	0.14 mg	2.05
2 g		0.57 mg	0.57 mg	1.1 mg	0.14 mg	2.05
1 g		0.16 mg	0.16 mg	0.90 mg	0.12 mg	2.05

End of Report


Ron Peterson, Metrologist

08/15/2017
Date of Report

Office of Weights and Measures
118 W. Capitol Ave.
Pierre, SD 57501

Phone: 605-773-3697
Fax: 605-773-6631
www.dps.sd.gov

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

2017

A handwritten signature in black ink, appearing to read "Georgia L. Harris".

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

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