

Office of Weights and Measures

Metrology Laboratory

Office: 118 West Capitol Avenue, Pierre, SD 57501

Lab: 1100 Otter Rd, Bldg D, Sturgis, SD 57785

Lab: 605-347-7541, Office: 605-773-3697, Cell: 605-280-4572

Email: ron.peterson@state.sd.us <https://dps.sd.gov/inspections/weights-measures>

CALIBRATION CERTIFICATE

Capital Scale Company

SA# **61**

Certificate number: **MP4343**

Physical Address:

Billing Address:

3021 Valley Forge Dr

3021 Valley Forge Dr

Bismarck, ND 58503

Bismarck, ND 58503

Contact: **Travis Will**

Received Date: **01/19/2023**

Phone: **701-255-1556**

Certificate Issued: **01/23/2023**

Artifacts Submitted and Summary of Results:

Quantity	Artifact	Total Pieces	Recvd in Tol	Adjusted	Rejected	As Left In Tolerance
2	2000 lb weight carts	2	2	0	0	2
20	1000 lb weights	20	20	1	0	20
64	50 lb weights	64	58	18	0	64
2	avoirdupois kits	33	33	0	0	33
1	metric kit	14	14	0	0	14

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 2008 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. For weight carts, factors included on the inspection checklist have not been included in the calibration uncertainty. However, factors on the checklist may contribute measurement errors that are significant if not properly maintained during use.

Conformity Statement:

The artifacts submitted for this calibration are calibrated to NIST Handbook 105-1 (1990 or 2019), NIST Handbook 105-8 (2019), NIST Handbook 105-3 (2010), or ASTM E617 (2018), Standard Specification for Laboratory Weights and Precision Mass Standards specifications. The reported test values relate only to the observations made at the time and conditions of the test. Artifacts fully comply with all requirements (both specifications and tolerances) of the applicable documentary standard unless otherwise stated. Stated expanded uncertainties are less than one-third of the specified tolerances (maximum permissible errors, m.p.e.) for mass calibrations and less than the specified tolerances for volume calibrations. The correction value plus or minus the expanded uncertainty is within the stated tolerances. It is the decision rule of the SD State Metrology Laboratory that any cast weights determined to have a correction within 66 % of the upper tolerance or 50 % of the lower tolerance will be adjusted closer to zero mass correction, even if the mass correction originally met the applicable tolerance.

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 certificate 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. 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 E Peterson, Metrologist 01/23/2023


 Dwight R Johnson, Reviewer 01/23/2023



South Dakota Department of Public Safety
Office of Weights and Measures
Metrology Lab
Lab: 1100 Otter Rd, Bldg D Sturgis, SD 57785 Phone: 605-347-7541
Office: 118 West Capitol Avenue Pierre, SD 57501 Phone: 605-773-3697



CALIBRATION CERTIFICATE

Calibrated for: **Capital Scale Company**

Certificate Number: **MP4343**

Calibration Date: **01/23/2023**

Environmental conditions at time of test:

Temperature: 44.6 °C

Humidity: 20.4 %

Pressure: 670.9 mmHg

Test method used: SOP 33 Calibrations of Weight Carts, May 2019

Test equipment used: Recently calibrated weights and a Mettler SLS510 Load Cell with IND570 Indicator.

Vaisala PT301

Condition of Carts: Used but in good condition

Manufacturer: Unk

SN:

541094

Nominal (lb)	AS Found (lb)	As Found (g)	As Left (lb)	As Left (g)	Uncertainty (lb)	k	Tolerance (lb)	Condition as Left
2000	-0.09	-41.65	-0.09	-41.65	0.11	2.01	0.70	In-Tolerance

Notes:


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

The above weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted if needed and as noted above to as close as practical 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 re-calibration of the weight cart prior to subsequent use.

Conformity Assessment:

The weight cart identified on this calibration certificate complies with NIST Handbook 105-8, 2019 specifications and tolerances. Additional details regarding the assessment are included in the associated checklist that is an integral part of this calibration certificate. The weight cart was found (or adjusted) to within the specified tolerances.

The above weight cart was compared with standards of the State of South Dakota, which are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and have current calibration values. The assigned certificate number provides documented evidence for measurement traceability.

 01/23/2023
Ron E Peterson, Metrologist

Ver 20220919



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




Inspection Checklist for Weight Cart

Calibrated for: Capital Scale Company Certificate number: MP4343
Calibration Date: 01/24/2023

Manufacturer: Unk Date of Manufacture unk
Model Number: unk ID/SN Number 541094

✓	Nominal Mass of Weight Cart	2000 lbs	Suitably marked: Yes/No	Yes
✓	Powered by:	Electric/generator	Diesel	Gasoline
✓	Fluid Levels:	Engine Oil		
		Hydraulic Fluid		Sealed: Yes/No
		Battery		Sealed: Yes/No
		Liquid Fuel		Reference Line Present: Yes/No
✓	Fluid drain tubes extend beyond the body of the cart: Yes/No		Yes	
✓	Number of axles:	2		
✓	Number /Size of Tires	18x7x12/16x5x11		
✓	Sealed wheel bearings: Yes/No	Yes		
✓	Drain holes present in locations where water may accumulate: Yes/No		Yes	
✓	Weight restraint railing permanently fixed and solid: Yes/No		Yes	
✓	Adjusting cavity accessible: Yes/No	Yes		Approximate capacity:(lbs)
✓	Adjusting cavity sealed: Yes/No	Yes		20
✓	Service brakes functioning properly: Yes/No		Yes	
✓	Parking brakes functioning properly: Yes/No		Yes	
	Remote control functioning properly: Yes/No			

✓	General condition at time of calibration (note any accumulated dirt/debris, damage, loose parts, or evidence of tampering or unauthorized entry of seals).	
✓	List and report any repair and maintenance performed, parts replaced, etc., Leaks repaired, new battery, carburetor, exhaust system, wheels changed, welding performed, etc. Include any comments or changes since the last calibration.	

 01/23/2023
Ron Peterson, Metrologist
Ver 20220919



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Office of Weights and Measures
Metrology Lab
Lab: 1100 Otter Rd, Bldg D Sturgis, SD 57785 Phone: 605-347-7541
Office: 118 West Capitol Avenue Pierre, SD 57501 Phone: 605-773-3697



CALIBRATION CERTIFICATE

Calibrated for: **Capital Scale Company**
Calibration Date: **01/23/2023**

Certificate Number: **MP4343**

Environmental conditions at time of test:

Temperature: 44.6 °C Humidity: 20.4 % Pressure: 670.9 mmhg

Test method used: SOP 33 Calibrations of Weight Carts, May 2019

Test equipment used: Recently calibrated weights and a Mettler SL5510 Load Cell with IND570 Indicator.
Vaisala PT301

Condition of Carts: Used but in good condition

Manufacturer: Unk

SN: unk

Nominal (lb)	AS Found (lb)	As Found (g)	As Left (lb)	As Left (g)	Uncertainty (lb)	k	Tolerance (lb)	Condition as Left
2000	0.11	49.18	0.11	49.18	0.11	2.01	0.70	In-Tolerance

Notes:

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

The above weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted if needed and as noted above to as close as practical 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 re-calibration of the weight cart prior to subsequent use.

Conformity Assessment:

The weight cart identified on this calibration certificate complies with NIST Handbook 105-8, 2019 specifications and tolerances. Additional details regarding the assessment are included in the associated checklist that is an integral part of this calibration certificate. The weight cart was found (or adjusted) to within the specified tolerances.

The above weight cart was compared with standards of the State of South Dakota, which are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and have current calibration values. The assigned certificate number provides documented evidence for measurement traceability.

 01/23/2023
Ron E Peterson, Metrologist

Ver 20220919



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



Inspection Checklist for Weight Cart

Calibrated for: Capital Scale Company Certificate number: MP4343
Calibration Date: 01/24/2023

Manufacturer: Date of Manufacture:
Model Number: ID/SN Number:

<input checked="" type="checkbox"/>	Nominal Mass of Weight Cart	2000 lbs	Suitably marked: Yes/No	<input type="text" value="Yes"/>
<input checked="" type="checkbox"/>	Powered by:	Electric/generator <input checked="" type="checkbox"/>	Diesel <input type="text"/>	Gasoline <input type="text"/>
<input checked="" type="checkbox"/>	Fluid Levels:	Engine Oil <input type="text"/>		
		Hydraulic Fluid <input type="text"/>		Sealed: Yes/No <input type="text"/>
		Battery <input checked="" type="checkbox"/>		Sealed: Yes/No <input type="text" value="Yes"/>
		Liquid Fuel <input type="text"/>	Reference Line Present: Yes/No	<input type="text"/>
<input checked="" type="checkbox"/>	Fluid drain tubes extend beyond the body of the cart: Yes/No		<input type="text" value="Yes"/>	
<input checked="" type="checkbox"/>	Number of axles:	<input type="text" value="2"/>		
<input checked="" type="checkbox"/>	Number /Size of Tires	<input type="text" value="18x7x12/16x5x11"/>		
<input checked="" type="checkbox"/>	Sealed wheel bearings: Yes/No	<input type="text" value="Yes"/>		
<input checked="" type="checkbox"/>	Drain holes present in locations where water may accumulate: Yes/No		<input type="text" value="Yes"/>	
<input checked="" type="checkbox"/>	Weight restraint railing permanently fixed and solid: Yes/No		<input type="text" value="Yes"/>	
<input checked="" type="checkbox"/>	Adjusting cavity accessible: Yes/No	<input type="text" value="Yes"/>	Approximate capacity:(lbs)	<input type="text" value="20"/>
<input checked="" type="checkbox"/>	Adjusting cavity sealed: Yes/No	<input type="text" value="Yes"/>		
<input checked="" type="checkbox"/>	Service brakes functioning properly: Yes/No	<input type="text" value="Yes"/>		
<input checked="" type="checkbox"/>	Parking brakes functioning properly: Yes/No	<input type="text" value="Yes"/>		
<input type="checkbox"/>	Remote control functioning properly: Yes/No	<input type="text"/>		

<input checked="" type="checkbox"/>	General condition at time of calibration (note any accumulated dirt/debris, damage, loose parts, or evidence of tampering or unauthorized entry of seals).	
<input checked="" type="checkbox"/>	List and report any repair and maintenance performed, parts replaced, etc., Leaks repaired, new battery, carburetor, exhaust system, wheels changed, welding performed, etc. Include any comments or changes since the last calibration.	

 01/23/2023
Ron Peterson, Metrologist

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South Dakota Department of Public Safety
Office of Weights and Measures
Metrology Lab
Lab: 1100 Otter Rd, Bldg. D Sturgis, SD 57785 Phone: 605-347-7541
Office: 118 West Capitol Avenue Pierre, SD 57501 Phone: 605-773-3697



CALIBRATION CERTIFICATE

Calibrated for: **Capital Scale Company**

Certificate number: **MP4343**

Calibration Date: **01/23/2023**

Purchase Order Number: **0**

Environmental conditions at time of test:

Temperature: 20.4 °C

Humidity: 45.2 %

Pressure: 670.9 mmhg

Test method used: SOP 8 Medium Accuracy Calibrations of Mass Standards by Modified Substitution, May 2019

Test equipment used: Lab standards traceable to the SI, Mettler XPR5003SC, Mettler XPR226CDR, Mettler AX206, Vaisala PTU301

Condition of Weights: Suitable for use. No significant wear or damage


Artifact(s): **25 50 lb weights**

Nominal	SN/ID	Correction as Found mg	Correction as Left mg	NIST Class F Tolerance (mg)	Uncertainty mg	k	Condition As Left
50 lb	3	-1128	-1128	2300	210	2.10	In-Tolerance
50 lb	6	-1858	2	2300	210	2.10	Adjusted
50 lb	8	-618	-618	2300	210	2.10	In-Tolerance
50 lb	9	-1928	-18	2300	210	2.10	Adjusted
50 lb	10	-2098	-8	2300	210	2.10	Adjusted
50 lb	16	-1208	-18	2300	210	2.10	Adjusted
50 lb	18	-928	-928	2300	210	2.10	In-Tolerance
50 lb	19	292	292	2300	210	2.10	In-Tolerance
50 lb	20	-1038	-1038	2300	210	2.10	In-Tolerance
50 lb	22	82	82	2300	210	2.10	In-Tolerance
50 lb	24	-678	-678	2300	210	2.10	In-Tolerance
50 lb	25	82	82	2300	210	2.10	In-Tolerance
50 lb	27	-1658	-18	2300	210	2.10	Adjusted
50 lb	29	-888	-888	2300	210	2.10	In-Tolerance
50 lb	30	-948	-948	2300	210	2.10	In-Tolerance
50 lb	31	-498	-498	2300	210	2.10	In-Tolerance
50 lb	32	-2268	2	2300	210	2.10	Adjusted
50 lb	35	402	402	2300	210	2.10	In-Tolerance
50 lb	39	-2268	2	2300	210	2.10	Adjusted
50 lb	41	-78	-78	2300	210	2.10	In-Tolerance
50 lb	42	172	172	2300	210	2.10	In-Tolerance
50 lb	43	-1078	-1078	2300	210	2.10	In-Tolerance
50 lb	44	-488	-488	2300	210	2.10	In-Tolerance
50 lb	45	-1098	-1098	2300	210	2.10	In-Tolerance
50 lb	46	-348	-348	2300	210	2.10	In-Tolerance

* Adjusted artifacts are in tolerance. Rejected and Condemned artifacts were tagged and must be placed out of service.

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

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

 01/23/2023

Ron E Peterson, Metrologist

Ver 20220919



South Dakota Department of Public Safety
Office of Weights and Measures
Metrology Lab
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Office: 118 West Capitol Avenue Pierre, SD 57501 Phone: 605-773-3697



CALIBRATION CERTIFICATE

Calibrated for: **Capital Scale Company**

Certificate number: **MP4343**

Calibration Date: **01/23/2023**

Purchase Order Number: **0**

Environmental conditions at time of test:

Temperature: 20.4 °C

Humidity: 45.2 %

Pressure: 670.9 mmHg

Test method used: SOP 8 Medium Accuracy Calibrations of Mass Standards by Modified Substitution, May 2019

Test equipment used: Lab standards traceable to the SI, Mettler XPR5003SC, Mettler XPR226CDR, Mettler AX206, Vaisala PTU301

Condition of Weights: Suitable for use. No significant wear or damage

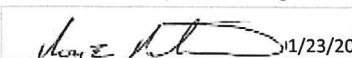
Artifact(s): **25 50 lb weights**

Nominal	SN/ID	Correction as Found mg	Correction as Left mg	NIST Class F Tolerance (mg)	Uncertainty mg	k	Condition As Left
50 lb	47	-258	-258	2300	210	2.10	In-Tolerance
50 lb	48	-738	-738	2300	210	2.10	In-Tolerance
50 lb	49	102	102	2300	210	2.10	In-Tolerance
50 lb	50	1492	1492	2300	210	2.10	In-Tolerance
50 lb	51	-2068	2	2300	210	2.10	Adjusted
50 lb	54	182	182	2300	210	2.10	In-Tolerance
50 lb	55	-1668	-28	2300	210	2.10	Adjusted
50 lb	60	-528	-528	2300	210	2.10	In-Tolerance
50 lb	61	-418	-418	2300	210	2.10	In-Tolerance
50 lb	62	-888	-888	2300	210	2.10	In-Tolerance
50 lb	64	-968	-968	2300	210	2.10	In-Tolerance
50 lb	70	-1128	-1128	2300	210	2.10	In-Tolerance
50 lb	71	-1118	-1118	2300	210	2.10	In-Tolerance
50 lb	72	-798	-798	2300	210	2.10	In-Tolerance
50 lb	80	-2808	12	2300	210	2.10	Adjusted
50 lb	11A	-2408	-18	2300	210	2.10	Adjusted
50 lb	11B	-898	-898	2300	210	2.10	In-Tolerance
50 lb	11C	292	292	2300	210	2.10	In-Tolerance
50 lb	11D	-698	-698	2300	210	2.10	In-Tolerance
50 lb	11F	-1458	22	2300	210	2.10	Adjusted
50 lb	11G	-798	-798	2300	210	2.10	In-Tolerance
50 lb	A	-868	-868	2300	210	2.10	In-Tolerance
50 lb	AAA	-1148	-1148	2300	210	2.10	In-Tolerance
50 lb	B	-1488	2	2300	210	2.10	Adjusted
50 lb	C	-158	-158	2300	210	2.10	In-Tolerance

* Adjusted artifacts are in tolerance. Rejected and Condemned artifacts were tagged and must be placed out of service.

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

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

 01/23/2023

Ron E Peterson, Metrologist

Ver 20220919



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Calibrated for:	Capital Scale Company	Certificate number:	MP4343
Calibration Date:	01/23/2023	Purchase Order Number:	0
Environmental conditions at time of test:			

Temperature: 21 °C **Humidity:** 44.9 % **Pressure:** 670.9 mmhg
Test method used: SOP 8 Medium Accuracy Calibrations of Mass Standards by Modified Substitution, May 2019
Test equipment used: Lab standards traceable to the SI, Mettler XPR5003SC, Mettler XPR226CDR, Mettler AX206, Vaisala PTU301
Condition of Weights: Suitable for use. No significant wear or damage

* Adjusted artifacts are in tolerance. Rejected and Condemned artifacts were tagged and must be placed out of service. The values reported relate only to those observations made at the time and conditions of the test. This calibration certificate, so numbered, may not be reproduced, except in full, without approval of the laboratory. These weights were not screened for magnetism or checked for density, and effects of magnetism or density are not included in the uncertainties.

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

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Office of Weights and Measures

Metrology Laboratory

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Lab: 1100 Otter Rd, Bldg D, Sturgis, SD 57785

Lab: 605-347-7541, Office: 605-773-3697, Cell: 605-280-4572

Email: ron.peterson@state.sd.us <https://dps.sd.gov/inspections/weights-measures>

CALIBRATION CERTIFICATE

Capital Scale Company (520 DSH)

SA# 61

Certificate number: MP4309

Physical Address:

Billing Address:

3021 Valley Forge Dr

3021 Valley Forge Dr

Bismarck, ND 58503

Bismarck, ND 58503

Contact: Travis Will

Received Date: 08/22/2022

Phone: 701-255-1556

Certificate Issued: 08/23/2022

Artifacts Submitted and Summary of Results:

Quantity	Artifact	Total Pieces	Recvd in Tol	Adjusted	Rejected	As Left In Tolerance
2	2000 lb Weight Carts	2	2	2	0	2
16	1000 lb Cast Weights	16	16	4	0	16
20	50 lb Cast Weights	20	1	19	0	20
1	lb Weight Kit	20	20	0	0	20
1	Metric Weight Kit	14	14	0	0	14

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 2008 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. For weight carts, factors included on the inspection checklist have not been included in the calibration uncertainty. However, factors on the checklist may contribute measurement errors that are significant if not properly maintained during use.

Conformity Statement:

The artifacts submitted for this calibration are calibrated to NIST Handbook 105-1 (1990 or 2019), NIST Handbook 105-8 (2019), NIST Handbook 105-3 (2010), or ASTM E617 (2018), Standard Specification for Laboratory Weights and Precision Mass Standards specifications. The reported test values relate only to the observations made at the time and conditions of the test. Artifacts fully comply with all requirements (both specifications and tolerances) of the applicable documentary standard unless otherwise stated. Stated expanded uncertainties are less than one-third of the specified tolerances (maximum permissible errors, m.p.e.) and the correction value plus or minus the expanded uncertainty is within the stated tolerances. It is the decision rule of the SD State Metrology Laboratory that any cast weights determined to have a correction within 66 % of the upper tolerance or 50 % of the lower tolerance will be adjusted closer to zero mass correction, even if the mass correction originally met the applicable tolerance.

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 certificate number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only.

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 08/23/2022
 Ron E Peterson, Metrologist


 08/23/2022
 Dwight R Johnson, Reviewer

CALIBRATION CERTIFICATE

Calibrated for: **Capital Scale Company (520 DSH)**

Certificate number: MP4309

Calibration Date: 08/23/2022

Purchase Order Number: 0

Environmental conditions at time of test:

Temperature: 22.8 °C

Humidity: 47.4 %

Pressure: 669.2 mmhg

Test method used: SOP 8 Medium Accuracy Calibrations of Mass Standards by Modified Substitution, May 2019

Test equipment used: Lab standards traceable to the SI, an XPE604KMC balance, and a Vaisala PTU301

Condition of Weights: Suitable for use. No significant wear or damage

Artifact(s): 16 - 1000 lb weights

[illegible]

* Adjusted artifacts are in tolerance. Rejected and Condemned artifacts were tagged and must be placed out of service.

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

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

08/23/2022

Ron Peterson, Metrologist

Ver 20210927



South Dakota Department of Public Safety
Office of Weights and Measures
Metrology Lab
Lab: 1100 Otter Rd, Bldg D Sturgis, SD 57785 Phone: 605-347-7541
Office: 118 West Capitol Avenue Pierre, SD 57501 Phone: 605-773-3697



CALIBRATION CERTIFICATE

Calibrated for: **Capital Scale Company (520 DSH)**

Certificate Number: **MP4309**

Calibration Date: **08/23/2022**

Environmental conditions at time of test:

Temperature: 21.3 °C

Humidity: 50.9 %

Pressure: 669.5 mmhg

Test method used: SOP 33, Calibrations of Weight Carts, May 2019.

Test equipment used: Recently calibrated weights and a Mettler-Toledo load cell and Indicator.

Condition of Carts: Used but in good condition

Manufacturer: Unk

SN: 2016-1

Nominal (lb)	AS Found (lb)	As Found (g)	As Left (lb)	As Left (g)	Uncertainty (lb)	k	Tolerance (lb)	Condition as Left
2000	0.30	136.19	0.02	7.42	0.12	2.04	0.70	In Tolerance

Notes:

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

The above weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted if needed and as noted above to 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 re-calibration of the weight cart prior to subsequent use.

Conformity Assessment:

The weight cart identified on this calibration certificate complies with NIST Handbook 105-8, 2019 specifications and tolerances. Additional details regarding the assessment are included in the associated checklist that is an integral part of this calibration certificate. The weight cart was found (or adjusted) to within the specified tolerances.

The above weight cart was compared with standards of the State of South Dakota, which are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and have current calibration values. The assigned certificate number provides documented evidence for measurement traceability.

08/23/2022

Ron Peterson, Metrologist

Ver 20210927



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



Inspection Checklist for Weight Cart


Calibrated for: Capital Scale Company (520 DSH)
Calibration Date: 08/23/2022

Certificate number: MP4309

Manufacturer: **Unk** Date of Manufacture: **Unk**
Model Number: **unk** ID/SN Number: **2016-1**

<input checked="" type="checkbox"/>	Nominal Mass of Weight Cart	2000 lbs	Suitably marked: Yes/No	Yes
<input checked="" type="checkbox"/>	Powered by:	Electric/generator <input checked="" type="checkbox"/>	Diesel <input type="checkbox"/>	Gasoline <input type="checkbox"/>
<input checked="" type="checkbox"/>	Fluid Levels:	Engine Oil <input type="checkbox"/>		
		Hydraulic Fluid <input type="checkbox"/>		Sealed: Yes/No <input type="checkbox"/>
		Battery <input checked="" type="checkbox"/>		Sealed: Yes/No <input type="checkbox"/>
		Liquid Fuel <input type="checkbox"/>		Reference Line Present: Yes/No <input type="checkbox"/>
<input checked="" type="checkbox"/>	Fluid drain tubes extend beyond the body of the cart: Yes/No		Yes	
<input checked="" type="checkbox"/>	Number of axles:	2		
<input checked="" type="checkbox"/>	Number /Size of Tires	18x7x12 1/8		
<input checked="" type="checkbox"/>	Sealed wheel bearings: Yes/No	Yes		
<input checked="" type="checkbox"/>	Drain holes present in locations where water may accumulate: Yes/No		Yes	
<input checked="" type="checkbox"/>	Weight restraint railing permanently fixed and solid: Yes/No		Yes	
<input checked="" type="checkbox"/>	Adjusting cavity accessible: Yes/No	Yes		Approximate capacity:(lbs) 25 lb
<input checked="" type="checkbox"/>	Adjusting cavity sealed: Yes/No	Yes		
<input checked="" type="checkbox"/>	Service brakes functioning properly: Yes/No		Yes	
<input checked="" type="checkbox"/>	Parking brakes functioning properly: Yes/No		Yes	
<input type="checkbox"/>	Remote control functioning properly: Yes/No			

<input checked="" type="checkbox"/>	General condition at time of calibration (note any accumulated dirt/debris, damage, loose parts, or evidence of tampering or unauthorized entry of seals).
<input checked="" type="checkbox"/>	List and report any repair and maintenance performed, parts replaced, etc., Leaks repaired, new battery, carburetor, exhaust system, wheels changed, welding performed, etc. Include any comments or changes since the last calibration.

 08/23/2022
Ron Peterson, Metrologist
Ver 20210927



South Dakota Department of Public Safety
Office of Weights and Measures
Metrology Lab
Lab: 1100 Otter Rd, Bldg D Sturgis, SD 57785 Phone: 605-347-7541
Office: 118 West Capitol Avenue Pierre, SD 57501 Phone: 605-773-3697



CALIBRATION CERTIFICATE

Calibrated for: **Capital Scale Company (520 DSH)**

Certificate Number: **MP4309**

Calibration Date: **08/23/2022**

Environmental conditions at time of test:

Temperature: 21.7 °C

Humidity: 49.5 %

Pressure: 669.4 mmHg

Test method used: SOP 33, Calibrations of Weight Carts, May 2019.

Test equipment used: Recently calibrated weights and a Mettler-Toledo load cell and Indicator.

Condition of Carts: Used but in good condition

Manufacturer: Unk

SN: 2016-2

Nominal (lb)	AS Found (lb)	As Found (g)	As Left (lb)	As Left (g)	Uncertainty (lb)	k	Tolerance (lb)	Condition as Left
2000	-0.12	-53.11	-0.01	-3.78	0.12	2.04	0.70	In Tolerance

Notes:

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

The above weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted if needed and as noted above to 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 re-calibration of the weight cart prior to subsequent use.

Conformity Assessment:

The weight cart identified on this calibration certificate complies with NIST Handbook 105-8, 2019 specifications and tolerances. Additional details regarding the assessment are included in the associated checklist that is an integral part of this calibration certificate. The weight cart was found (or adjusted) to within the specified tolerances.

The above weight cart was compared with standards of the State of South Dakota, which are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and have current calibration values. The assigned certificate number provides documented evidence for measurement traceability.

08/23/2022

Ron Peterson, Metrologist



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



Inspection Checklist for Weight Cart


Calibrated for: Capital Scale Company (520 DSH)
Calibration Date: 08/23/2022

Certificate number: MP4309

Manufacturer: Date of Manufacture:
Model Number: ID/SN Number:

<input checked="" type="checkbox"/>	Nominal Mass of Weight Cart	2000 lbs	Suitably marked: Yes/No	<input type="text" value="Yes"/>
<input checked="" type="checkbox"/>	Powered by:	Electric/generator <input checked="" type="checkbox"/>	Diesel <input type="text"/>	Gasoline <input type="text"/>
<input checked="" type="checkbox"/>	Fluid Levels:	Engine Oil <input type="text"/>		
		Hydraulic Fluid <input type="text"/>		Sealed: Yes/No <input type="text"/>
		Battery <input checked="" type="checkbox"/>		Sealed: Yes/No <input type="text"/>
		Liquid Fuel <input type="text"/>		Reference Line Present: Yes/No <input type="text"/>
<input checked="" type="checkbox"/>	Fluid drain tubes extend beyond the body of the cart: Yes/No		<input type="text" value="Yes"/>	
<input checked="" type="checkbox"/>	Number of axles:	<input type="text" value="2"/>		
<input checked="" type="checkbox"/>	Number /Size of Tires	<input type="text" value="18x7x12 1/8"/>		
<input checked="" type="checkbox"/>	Sealed wheel bearings: Yes/No	<input type="text" value="Yes"/>		
<input checked="" type="checkbox"/>	Drain holes present in locations where water may accumulate: Yes/No		<input type="text" value="Yes"/>	
<input checked="" type="checkbox"/>	Weight restraint railing permanently fixed and solid: Yes/No		<input type="text" value="Yes"/>	
<input checked="" type="checkbox"/>	Adjusting cavity accessible: Yes/No	<input type="text" value="Yes"/>		Approximate capacity:(lbs) <input type="text" value="25 lb"/>
<input checked="" type="checkbox"/>	Adjusting cavity sealed: Yes/No	<input type="text" value="Yes"/>		
<input checked="" type="checkbox"/>	Service brakes functioning properly: Yes/No		<input type="text" value="Yes"/>	
<input checked="" type="checkbox"/>	Parking brakes functioning properly: Yes/No		<input type="text" value="Yes"/>	
<input type="checkbox"/>	Remote control functioning properly: Yes/No		<input type="text"/>	

<input checked="" type="checkbox"/>	General condition at time of calibration (note any accumulated dirt/debris, damage, loose parts, or evidence of tampering or unauthorized entry of seals).	
<input checked="" type="checkbox"/>	List and report any repair and maintenance performed, parts replaced, etc., Leaks repaired, new battery, carburetor, exhaust system, wheels changed, welding performed, etc. Include any comments or changes since the last calibration.	

 08/23/2022
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Ver 20210927



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CALIBRATION CERTIFICATE

Calibrated for: Capital Scale Company (520 DSH)

Certificate number: MP4309

Calibration Date: 08/23/2022

Purchase Order Number: 0

Environmental conditions at time of test:

Temperature: 23.8 °C

Humidity: 46.3 %

Pressure: 669 mmHg

Test method used: SOP 8 Medium Accuracy Calibrations of Mass Standards by Modified Substitution, May 2019

Test equipment used: Lab standards traceable to the SI, Mettler AX205, Mettler XPR5003SC, Mettler AX206, Vaisala PTU301

Condition of Weights: Suitable for use. No significant wear or damage


Artifact(s): 20 50 lb weights

Nominal	SN/ID	Correction as Found mg	Correction as Left mg	NIST Class F Tolerance (mg)	Uncertainty mg	k	Condition As Left
50 lb	1	-1723	2	2300	200	2.0	Adjusted
50 lb	12	-1308	42	2300	200	2.0	Adjusted
50 lb	14	-2988	-3	2300	200	2.0	Adjusted
50 lb	17	-467978	12	2300	200	2.0	Adjusted
50 lb	28	-3078	-18	2300	200	2.0	Adjusted
50 lb	38	-2653	-3	2300	200	2.0	Adjusted
50 lb	43	1632	-18	2300	200	2.0	Adjusted
50 lb	56	91	91	2300	200	2.0	In-Tolerance
50 lb	59	-3183	17	2300	200	2.0	Adjusted
50 lb	65	-4948	-18	2300	200	2.0	Adjusted
50 lb	67	-4308	-18	2300	200	2.0	Adjusted
50 lb	68	-4933	-8	2300	200	2.0	Adjusted
50 lb	78	-1008	2	2300	200	2.0	Adjusted
50 lb	79	-2968	-28	2300	200	2.0	Adjusted
50 lb	F	-2898	12	2300	200	2.0	Adjusted
50 lb	P	-4068	2	2300	200	2.0	Adjusted
50 lb	W	-2588	-8	2300	200	2.0	Adjusted
50 lb	X	-21103	-13	2300	200	2.0	Adjusted
50 lb	Y	-2143	-8	2300	200	2.0	Adjusted
50 lb	Z	-18478	2	2300	200	2.0	Adjusted

* Adjusted artifacts are in tolerance. Rejected and Condemned artifacts were tagged and must be placed out of service.

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

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

 08/23/2022

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