



**DEPARTMENT OF COMMERCE**  
WEIGHTS & MEASURES DIVISION

14305 Southcross Drive #150  
Burnsville, MN 55306-7008  
mn.gov/commerce/  
651.539.1555 FAX 952.435.4040  
An equal opportunity employer



Receipt Date: November 2, 2017  
Cal. Date: November 3, 2017  
Report Date: November 3, 2017

Report No.: 338393  
Set Serial No.: 4760  
Barcode: 019210

**Calibration Certificate**

HOBART SALES & SERVICE  
18 SOUTH 14TH STREET  
FARGO, ND 58103  
Contact: JEFF DOYLE  
Phone: 701-237-5240  
PO Number: NONE  
Procedure: NIST SOP 8  
Technician ID: 09

Item(s) Submitted: 30 lb kit w/ decimals & ounces  
Manufacturer: Troemner  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.7 °C  
Pressure: 747.1 mmHg  
Relative Humidity: 49.4 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb		181.2	181.2	F	F	2.03	6.0
5 lb		163.2	163.2	F	F	2.03	6.0
5 lb		187.2	187.2	F	F	2.03	6.0
5 lb		74.2	74.2	F	F	2.03	6.0
5 lb		176.2	176.2	F	F	2.03	6.0
1 lb		33.8	33.8	F	F	2.03	1.6
1 lb		43.7	43.7	F	F	2.03	1.6
1 lb		36.1	36.1	F	F	2.03	1.6
1 lb		34.3	34.3	F	F	2.03	1.6
1 lb		31.6	31.6	F	F	2.03	1.6
0.2 lb		4.44	4.44	F	F	2.03	0.22
0.2 lb		3.44	3.44	F	F	2.03	0.22
0.1 lb		7.09	7.09	F	F	2.03	0.14
0.05 lb		2.55	2.55	F	F	2.03	0.11
0.02 lb		0.833	0.833	F	F	2.03	0.066
0.02 lb		0.826	0.826	F	F	2.03	0.066
0.01 lb		0.685	0.685	F	F	2.03	0.052
0.005 lb		0.564	0.564	F	F	2.03	0.073
0.002 lb		0.583	0.583	F	F	2.03	0.047
0.001 lb		-0.455	-0.455	F	F	2.03	0.041



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Continued,  
 338393  
 4760  
 019210

**Calibration Certificate**

HOBART SALES & SERVICE  
 18 SOUTH 14TH STREET  
 FARGO, ND 58103  
 Contact: JEFF DOYLE  
 Phone: 701-237-5240  
 PO Number: NONE  
 Procedure: NIST SOP 8  
 Technician ID: 09

Item(s) Submitted: 30 lb kit w/ decimals & ounces  
 Manufacturer: Troemner  
 Weight Type: I & II  
 Equipment ID: None  
 Condition: Good  
 Temperature: 19.7 °C  
 Pressure: 747.1 mmHg  
 Relative Humidity: 49.4 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
8 oz		4.2	4.2	F	F	2.03	1.3
4 oz		9.69	9.69	F	F	2.00	0.22
2 oz		6.01	6.01	F	F	2.00	0.14
1 oz		1.01	1.01	F	F	2.00	0.11
1/2 oz		1.455	1.455	F	F	2.00	0.092
1/4 oz		0.955	0.955	F	F	2.00	0.056
1/8 oz		-0.519	-0.519	F	F	2.00	0.046
1/16 oz		0.533	0.533	F	F	2.00	0.070
1/32 oz		0.297	0.297	F	F	2.00	0.044
1/32 oz		0.488	0.488	F	F	2.00	0.044

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Heidi Jones  
  
 Laboratory Administrator

Reviewed by:  
 Erik Alfvin  
  
 Metrologist



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Receipt Date: November 2, 2017  
Cal. Date: November 3, 2017  
Report Date: November 3, 2017

Report No.: 338394  
Set Serial No.: None  
Barcode: 200897

**Calibration Certificate**

HOBART SALES & SERVICE  
18 SOUTH 14TH STREET  
FARGO, ND 58103  
Contact: JEFF DOYLE  
Phone: 701-237-5240  
PO Number: NONE  
Procedure: NIST SOP 8  
Technician ID: 09

Item(s) Submitted: 30 lb kit w/ decimals  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.7 °C  
Pressure: 747.1 mmHg  
Relative Humidity: 49.4 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
10 lb		144	144	F	F	2.03	12
10 lb		125	125	F	F	2.03	12
5 lb		75.2	75.2	F	F	2.03	6.0
2 lb		29.1	29.1	F	F	2.03	3.1
2 lb		26.3	26.3	F	F	2.03	3.1
1 lb		28.3	28.3	F	F	2.03	1.6
0.2 lb		4.84	4.84	F	F	2.03	0.22
0.2 lb		4.84	4.84	F	F	2.03	0.22
0.1 lb		4.05	4.05	F	F	2.03	0.14
0.05 lb		1.91	1.91	F	F	2.03	0.11
0.02 lb		0.479	0.479	F	F	2.03	0.066
0.02 lb		0.586	0.586	F	F	2.03	0.066
0.01 lb		0.679	0.679	F	F	2.03	0.052
0.005 lb		0.235	0.235	F	F	2.03	0.073
0.002 lb		0.513	0.513	F	F	2.03	0.047
0.002 lb		0.221	0.221	F	F	2.03	0.047
0.001 lb		0.439	0.439	F	F	2.03	0.041

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Heidi Jones  
*Heidi Jones*  
Laboratory Administrator

Reviewed by:  
Erik Alfvin  
*Erik Alfvin*  
Metrologist



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Receipt Date: November 2, 2017  
 Cal. Date: November 3, 2017  
 Report Date: November 3, 2017

Report No.: 338395  
 Set Serial No.: None  
 Barcode: 200923

**Calibration Certificate**

HOBART SALES & SERVICE  
 18 SOUTH 14TH STREET  
 FARGO, ND 58103-1620  
 Contact: JEFF DOYLE  
 Phone: 701-237-5240  
 PO Number: None  
 Procedure: NIST SOP 8  
 Technician ID: 19

Item(s) Submitted: 50 lb, 25 lb Weights - Class F  
 Manufacturer: Rice Lake and Hobart  
 Weight Type: II  
 Equipment ID: None  
 Condition: Fair  
 Temperature: 20.3 °C  
 Pressure: 747.2 mmHg  
 Relative Humidity: 51.5 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
50 lb		-216	-216	F	F	2.01	56
50 lb		274	274	F	F	2.01	56
50 lb		-76	-76	F	F	2.01	56
50 lb		-296	-296	F	F	2.01	56
50 lb		1634	1634	F	F	2.01	56
50 lb		254	254	F	F	2.01	56
50 lb		744	744	F	F	2.01	56
25 lb		107	107	F	F	2.02	52
25 lb		127	127	F	F	2.02	52
25 lb		-183	-183	F	F	2.02	52
25 lb		97	97	F	F	2.02	52
25 lb		147	147	F	F	2.02	52
25 lb		57	57	F	F	2.02	52

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Erik Alfvin

Metrologist

Reviewed by:

Pete Whebbe

Metrologist

# United States Department of Commerce

## National Institute of Standards and Technology

Certificate of Metrological Traceability For:

# Minnesota

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.

2017

### Scope

**Mass Echelon I**  
10 kg to 1 mg

**Mass Echelon II**  
50 kg to 1 mg  
1000 lb to 0.001 lb  
4 oz to 0.03125 oz

**Mass Echelon III**  
50 kg to 1 mg  
5000 lb to 0.001 lb  
4 oz to 0.03125 oz

**Weight Carts**  
10 000 lb to 2000 lb

**Wheel Load Weighers**  
20 000 lb to 2000 lb

**Railroad Test Cars**  
110 000 lb to 80 000 lb

**Volume Gravimetric, I**  
20 L to 10 mL  
100 gal to 0.25 qt

**Volume Transfer, II**  
1500 gal to 5 gal  
100 gal to 25 gal LPG



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

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

Amended: 2016-12-31  
Scope modified for 2017.