



State of Wisconsin
Governor Scott Walker

Department of Agriculture, Trade and Consumer Protection
Sheila E. Harsdorf, Secretary

Wisconsin Weights and Measures Laboratory

*Calibration Certificate
Statement of
Uncertainty, Traceability, Limitations, and Conditions
for calibration work performed for:*

HAWKEYE STATE SCALE, INC

5040 BLAIRS FOREST WAY, SUITE F
CEDAR RAPIDS
IA
52402
(319)-364-4173

Date Received: 12/6/2018
Date of Calibration: 12/6/2018
Date Due:

State Test No.: W18-355

Uncertainty Statement

For the weights used in this calibration, some components can be assessed through a Type A evaluation, the method for assessing uncertainty by a statistical analysis of measured quantity values obtained under defined measurement conditions. In addition, other components were assessed from a Type B evaluation of standard uncertainty, based on scientific judgement using all of the relevant information available. The combined standard uncertainties multiplied by those coverage factors specified in our standard calibration records, to provide an expanded uncertainty. This uncertainty defined an interval having a level of confidence of approximately 95 per cent, assuming normal distribution. The expanded uncertainty presented in this report is consistent with the ISO/IEC Guide to the Expression of Uncertainty in Measurement using the method Root Sum Squares (JCGM 100:2008).

Traceability Statement

The standards used by the Wisconsin State laboratory demonstrate an unbroken traceable chain to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The laboratory maintains documented calibration intervals and uses documented procedures, all under the performance of trained personnel who demonstrate suitable measurement assurance for the information listed in this calibration report. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for the artifacts identified in this report. The State Standards are traceable to the SI unit for mass, the kilogram.

Limitations and Conditions Statement

These results relate only to the items calibrated in this report. Weights and weight carts are calibrated to NIST Handbook 105-1 (1990) and NIST Handbook 105-8 (2003), respectively, using NISTIR 6969: Selected Laboratory Measurement Practices and Procedures to Support Basic Mass Calibrations (2018). Class F tolerances are usable for testing commercial weighing devices in Wisconsin, following NIST Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices. Weights calibrated to ASTM tolerance 7 by this laboratory cannot be used for testing commercial weighing devices in Wisconsin, by definition (See NIST Handbook 105-1, Specification 1). Weight calibrated by ASTM Standard Specification E617-13 are not checked for density [Stainless steel weights are assumed 8.0 g/cm³], or for magnetism.

The following standard(s) were used: 1000 lb: 392

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Paul Masterson

Paul Masterson, Chief Metrologist

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Justin Lien

Justin Lien, Laboratory Director

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Calibration Certificate

Date Received: December 06, 2018
Date of Calibration: December 06, 2018

State Test No.: W18-355
Item(s) Submitted: Cast Weight
Manufacturer: Various
Condition: Good
Tolerance Class: NIST HB 105-1 (1990), Class F
Kit Serial #:
Balance ID#: 10
Procedure Used: NISTIR 6969 (2018), SOP 8
Temperature: 18.8 °C
Relative Humidity: 47.1 %
Pressure: 745.2 mmHg

Customer: HAWKEYE STATE SCALE, INC
Address: 5040 BLAIRS FOREST WAY, SUITE F
CEDAR RAPIDS, IA 52402
Contact: NATE SYTSMA
Phone: (319)-364-4173
PO Number: 2006

Nominal Mass	Mass Unit	Serial No.	Conventional Mass Correction (mg)		NIST HB 105-1 (1990), Class F		Uncertainty (mg)	Coverage Factor (k)
			As Found	As Left	As Found	As Left		
1000	lb	2-7	8,540	8,540	Pass	Pass	5600	2.01
1000	lb	2-17	-36,860	-36,860	Pass	Pass	5600	2.01
1000	lb	2-18	-23,060	-23,060	Pass	Pass	5600	2.01
1000	lb	2-13	-2,660	-2,660	Pass	Pass	5600	2.01
1000	lb	2-14	-59,360	1,640	Fail	Pass	5600	2.01
1000	lb	2-11	-19,160	-19,160	Pass	Pass	5600	2.01
1000	lb	2-9	26,540	26,540	Pass	Pass	5600	2.01
1000	lb	2-6	24,640	24,640	Pass	Pass	5600	2.01
1000	lb	2-19	-4,660	-4,660	Pass	Pass	5600	2.01
1000	lb	2-3	20,540	20,540	Pass	Pass	5600	2.01
1000	lb	2-1	28,540	28,540	Pass	Pass	5600	2.01
1000	lb	2-4	-11,260	-11,260	Pass	Pass	5600	2.01
1000	lb	2-12	-59,260	-60	Fail	Pass	5600	2.01
1000	lb	2-16	-13,360	-13,360	Pass	Pass	5600	2.01
1000	lb	2-20	-27,260	-27,260	Pass	Pass	5600	2.01
1000	lb	2-8	24,940	24,940	Pass	Pass	5600	2.01
1000	lb	2-2	4,040	4,040	Pass	Pass	5600	2.01
1000	lb	2-15	-14,760	-14,760	Pass	Pass	5600	2.01
1000	lb	2-10	30,140	30,140	Pass	Pass	5600	2.01
1000	lb	2-5	23,440	23,440	Pass	Pass	5600	2.01

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Paul Masterson, Chief Metrologist

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Justin Lien, Laboratory Director