



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: 12/5/2018
Date of Calibration: 12/5/2018
Date Due:

State Test No.: W18-353

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.

r Weight has been rejected for calibration (please see enclosed letter for details).

The following standard(s) were used: 50 lb: W50LB, 20 lb: W20

This report may not be reproduced, except in full, without the written approval of the Chief Metrologist or Lab Director.

Paul Masterson

Paul Masterson, Chief Metrologist

Justin Lien

Justin Lien, Laboratory Director



State of Wisconsin
Governor Scott Walker

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

Wisconsin Weights and Measures Laboratory

Calibration Certificate

Date Received: December 05, 2018

Date of Calibration: December 05, 2018

State Test No.: W18-353

Item(s) Submitted: Cast Weight

Manufacturer: Various

Condition: Good

Tolerance Class: NIST HB 105-1 (1990), Class F

Kit Serial #:

Balance ID#: 8

Procedure Used: NISTIR 6969 (2018), SOP 8

Temperature: 18.3 °C

Relative Humidity: 43.2 %

Pressure: 739.3 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: 2005

	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		
	20	lb	3-41	-2,896	14	Fail	Pass	110	2.09
	50	lb	3-35	-5,465	85	Fail	Pass	280	2.03
r	50	lb	3-22	-2,375	-2,375	Fail	Fail	280	2.03
	50	lb	3-36	-3,855	5	Fail	Pass	280	2.03
	50	lb	3-24	-2,545	-35	Fail	Pass	280	2.03
	50	lb	3-26	-1,815	-1,815	Pass	Pass	280	2.03
	50	lb	3-32	-3,505	65	Fail	Pass	280	2.03
	50	lb	3-38	-2,495	55	Fail	Pass	280	2.03
	50	lb	3-23	-1,855	-1,855	Pass	Pass	280	2.03
	50	lb	3-31	-3,305	5	Fail	Pass	280	2.03
	50	lb	3-29	-4,345	1,075	Fail	Pass	280	2.03
	50	lb	3-30	-3,655	65	Fail	Pass	280	2.03
	50	lb	3-34	-4,165	65	Fail	Pass	280	2.03
	50	lb	3-21	-2,225	75	Fail	Pass	280	2.03
	50	lb	3-27	-2,875	95	Fail	Pass	280	2.03
	50	lb	3-28	-815	-815	Pass	Pass	280	2.03
	50	lb	3-37	-6,465	95	Fail	Pass	280	2.03
	50	lb	3-39	-3,455	85	Fail	Pass	280	2.03
	50	lb	3-25	-3,725	25	Fail	Pass	280	2.03
	50	lb	3-33	-4,355	55	Fail	Pass	280	2.03
	50	lb	3-40	-3,505	5	Fail	Pass	280	2.03

r Weight has been rejected for calibration (please see enclosed letter for details).

The following standard(s) were used: 50 lb: W50LB, 20 lb: W20

This report may not be reproduced, except in full, without the written approval of the Chief Metrologist or Lab Director.

Paul Masterson
Paul Masterson, Chief Metrologist

Justin Lien
Justin Lien, Laboratory Director