



State of Wisconsin
Governor Tony Evers

Department of Agriculture, Trade and Consumer Protection

Wisconsin Weights and Measures Laboratory

Calibration Certificate for calibration work performed for: **HAWKEYE STATE SCALE, INC.**

1357 HWY 965 NW
SWISHER, IA 52338
(319) 364-4173

Date Received: January 13, 2022
Date of Calibration: January 14, 2022
Date Issued: January 24, 2022
Date Due:

State Test No.: W22-005

Uncertainty Statement

For the mass standards used in this calibration, some uncertainty components were 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 uncertainty was multiplied by a statistically determined coverage factor to provide an expanded uncertainty. The expanded uncertainty defines an interval having a level of confidence of approximately 95 percent, 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 Root Sum Squares method (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 certificate. The laboratory test number identified above is the unique test number to be used in referencing measurement traceability for the artifacts identified in this certificate. The State Standards are traceable to the SI unit for mass, the kilogram.

Conformity Statement

These results relate only to the items calibrated in this certificate. Field standards and weight carts are calibrated based on guidance described in NIST Handbook 105-1 (2019) and NIST Handbook 105-8 (2019), respectively, using NISTIR 6969: Selected Laboratory Measurement Practices and Procedures to Support Basic Mass Calibrations (2019). Field standards calibrated to NIST Class F, ASTM 5, and ASTM 6 tolerances are usable for testing class III, III L, and IIII weighing devices, following NIST Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices. Field standards calibrated to NIST Class F, ASTM 5, or ASTM 6 tolerances are not suitable for testing class I and class II weighing devices, which must be tested with field standards of higher precision than NIST Class F, ASTM 5, or ASTM 6. Weights calibrated to ASTM 7 tolerances by this laboratory cannot be used for testing commercial weighing devices. Field standards calibrated to ASTM Standard Specification E617-18 are not checked for density [Stainless steel weights are assumed 8.0 grams per cubic centimeter], or for magnetism.

Decision Rule

All calibrated weights and weight carts that are determined to have a mass correction such that: $|\text{Correction}| > (\text{Tolerance} - \text{Uncertainty})$ are considered to have failed to meet the applicable tolerance. It is the decision rule of the Wisconsin State laboratory that all calibrated weights and weight carts that are determined to have a mass correction such that: $|\text{Correction}| > (0.95 * \text{Tolerance} - \text{Uncertainty})$ will be adjusted to be closer to zero mass correction, even if the mass correction of the weights and weight carts originally met the applicable tolerance. Customers may request exceptions to this decision rule.

The following standard(s) were used: 10 lb: W10, 5 lb: W5

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Paul Masterson

Paul Masterson, Lead Metrologist

Justin Lien

Justin Lien, Laboratory Director



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Calibration Certificate

Date Received: January 13, 2022
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State Test No.: W22-005
Item(s) Submitted: Cast Weight
Manufacturer: Various
Condition: Good, Acceptable for Calibration
Tolerance Class: ASTM E617-18, Class 6

Customer: HAWKEYE STATE SCALE, INC.
Address: 1357 HWY 965 NW
SWISHER, IA 52338
Contact: ZACH KNORR
Phone: (319) 364-4173
PO Number: 10309

Balance ID#: 7
Procedure Used: NISTIR 6969 (2019), SOP 8
Temperature: 21.2 °C
Relative Humidity: 53.0 %
Pressure: 749.5 mmHg

| Nominal Mass | Mass Unit | Serial No. | Conventional Mass Correction (mg) | | ASTM E617-18, Class 6 | | Uncertainty (mg) | Coverage Factor (k) |
|--------------|-----------|------------|-----------------------------------|---------|-----------------------|---------|------------------|-----------------------|
| | | | As Found | As Left | As Found | As Left | | |
| 10 | lb | 9A9L | 737 | 6 | Fail | Pass | 53 | 2.01 |
| 5 | lb | C01 | -223 | 157 | Fail | Pass | 27 | 2.01 |

The following standard(s) were used: 10 lb: W10, 5 lb: W5

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Paul Masterson
Paul Masterson, Lead Metrologist

Justin Lien
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