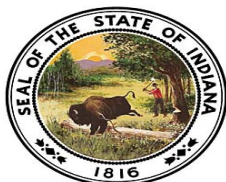


Eric Halcome
Governor



Mike Miller
Director, Department of Weights &
Measures

Mail

2525 N Shadeland Ave Site D3 **INDIANA STATE DEPARTMENT HEALTH**
Indianapolis, IN 46219

STATE OF INDIANA
Metrology Laboratory
Weights and Measures Program
Metrology Laboratory

Shipping

2525 N Shadeland Ave
Indianapolis, IN 46219

Phone: (317) 356-7078

Fax: (317) 351-2877

Calibration Certificate

Certificate Number: 19-678WC

Calibration Date: May 28 2019
Calibration Due Date: May 28 2020

Tested Item: 3000 lb Tippin Weight Cart

Issued To: Koenig Scale Company Inc
4779 E Margert Dr
Terre, IN 47803

POC: Jim Maxwell
Phone: 812-877-6121

PO Number:

Date Received: 05/28/2019

Calibration Item Description

Test Item: 3000 lb Weight Cart
Serial No: KSC-3000
Manufacture: Tippin
Condition: Good

Model No.: C-3000
Weight Cart Mfg. Date: March 17, 1989
Class Specification: NIST HB 105-8

Calibration Information

Job Order #:
Metrologist: Howard Wickersham
Procedure: NIST SOP 33 with SOP 8 modifications

Temperature: 22.5 °C
Pressure: 730.0 mm Hg
Humidity: 46.0 % RH

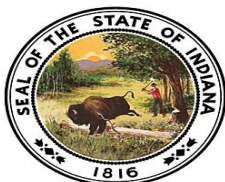
Laboratory Reference Standards Used

Description	Serial Number	Certification No.	Cal Date	Cal Due
	1	181253	10/31/2018	10/31/2020
	2 & 3	2018-0978	10/31/2018	10/31/2020

Calibration Results

Nominal Mass (lb)	As Found Conventional Mass (lb)	As Left Conventional Mass (lb)	U ± (lb)	k factor	Degrees of Freedom	NIST HB 105-8 Tol. ± (lb)
3000	3001.75	3000.5	0.34	3.31	3	1.1

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Traceability Statement

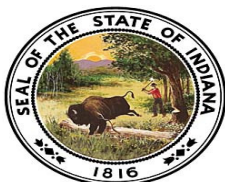
The calibration item described in this calibration certificate have been compared to the Standards of the State of Indiana. The Standards of the State of are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The SI for mass is the kilogram (kg) (see Conversion Factors below). The certificate number for this calibration is the only unique number to be used in referencing measurement traceability for the calibration item described in this certificate.

Uncertainty Statement

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits (previous similar determinations have demonstrated that the maximum permissible errors are sufficiently large that buoyancy corrections are not usually significant [i.e., corrections & their uncertainty will not change the last decimal place of the calibration value or uncertainty (with uncertainty rounded to 2 significant digits)]. The combined standard uncertainty is multiplied by a coverage factor, k, to give the expanded uncertainty, which defines an interval with a 95.45 % level of confidence. The expanded uncertainty presented in this certificate is consistent with the BIPM JCGM 100:2008, *Evaluation of measurement data — Guide to the expression of uncertainty in measurement (GUM 1995 with minor corrections)*. 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 maintained during use.

Recognition Statement

Recognized by the National Institute of Standards and Technology (NIST) for the specified scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 and ANSI/NCSL Z540-1.



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Certificate Number: 19-678WC

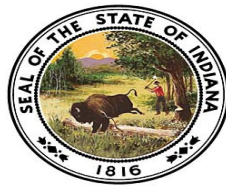
Calibration Date: May 28 2019
Calibration Due Date: May 28 2020

Tested Item: 3000 lb Tippin Weight Cart

Pertinent Information

- In-accordance-with ISO/IEC 17025:2017, General Requirements for the Competence of Testing and Calibration Laboratories, paragraph 7.8.4.3, "A calibration certificate or calibration label shall not contain any recommendation on the calibration interval, except where this has been agreed with the customer."
- In-accordance-with Indiana Administrative Code (IAC) Chapter 16-663, Service Agents -- Reporting, Test Procedures, Standards And Calibration Of Weighing And Measuring Devices, Section 16-663-130, Adequacy of standards and submission of standards for certification, paragraph 2, '... All standards used for servicing, repairing and/or calibrating commercial weighing and measuring devices must be submitted at least every two years for examination and certification...'
- The reference for determining the tolerance is NIST HB 105-8 (2003), *Specifications and Tolerances for Field Standard Weight Carts*.
- The weight cart was allowed to come to thermal and environmental equilibrium in the laboratory prior to calibration. The weight cart listed above has been adjusted as close to nominal as possible and left within the tolerances for the specification stated above, except as noted. A weight cart is considered in-tolerance when the correction plus the measurement uncertainty is equal to or less than the specified tolerance. An out-of-tolerance condition is highlighted in **RED** (see the Inspection Checklist for changes that may have contributed to an out-of-tolerance condition).
- All fluid levels stated in the attached Inspection Checklist were adjusted as close as possible to the full/reference marks and sealed. Liquid levels must be maintained as close to reference levels as possible during use.
- The attached Inspection Checklist is an integral component of this Calibration Report and a copy must be maintained with the cart and reviewed prior to use.
- Any maintenance, repairs, replacement of parts, 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, or other items listed on the checklist, require calibration of the weight cart prior to subsequent use.
- The adjusting cavity was sealed after adjustment with Seal Number None
- Conventional Mass: "The conventional value of the result of weighing a body in air is equal to the mass of a standard, of conventionally chosen density, at a conventionally chosen temperature, which balances this body at this reference temperature in air of conventionally chosen density." The conventions are: reference density 8.0 g/cm³; reference temperature 20 °C; normal air density 0.0012 g/cm³. Conventional mass was formerly called "Apparent Mass versus 8.0 g/cm³" in the United States and is not recommended. See OIML D28 (2004).
- The results listed in this calibration certificate relate only to the calibration item described and extent of calibrations performed.

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Governor



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Conversion Factors



From NIST Special Publication 811, *Guide for the Use of the International System of Units (SI)*

Factors in **boldface** are exact

To convert from	to	multiply by
pound (avoirdupois) (lb)	to kilogram (kg)	4.535 923 7 E-01

NIST

Recognized by the National Institute of Standards & Technology for the specific scope of recognition. This calibration certificate may not be used to claim product endorsement by NIST or any other government agency, and may not be reproduced, except in full, without written approval from the laboratory.

I declare or certify under penalty of perjury under the laws of the State of Indiana that the foregoing is true and correct:

Signed this 9th day of April, 2019 in the City of Indianapolis, Marion County, Indiana.

Signature: _____

Howard Wickersham, State Metrologist

Attachment: Weight Cart Inspection Checklist