



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Hopper Scale
Suspension Hopper, Load Receiving Elements, Mechanical
Lever System
Model: SH Series
 n_{max} : 2 000
Capacity: 1 000 lb to 100 000 lb (see below)
Accuracy Class: III/III L

***Submitted By: Contact Info. Updated: October 2010**

Cardinal Scale Manufacturing Co.
203 East Daugherty
Webb City, MO 64870
Tel: 417-673-4631
Fax: 417-673-5001
Contact: Stephen Langford
Email: slangford@cardet.com
Web site: www.cardinalscales.com


Standard Features and Options**Options:**

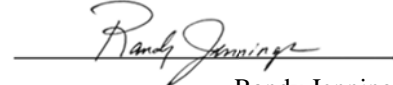
- Mechanical Indicator
- Digital Electronic Indicator (The load cell must meet the formula, $v_{min} = d/(\sqrt{N} \times \text{scale multiple})$ where N = number of load cells)

Model Number	Maximum Rated Nominal Capacity (lb)	Minimum Verification Interval e_{min} (lb)	Maximum Gross Capacity (lb)
SH-1	1 000	1	1 250
SH-2	5 000	5	6 250
SH-3	9 000	10	11 250
SH-3.5	14 000	10	17 500
SH-4	23 000	20	28 750
SH-5	30 000	20	37 500
SH-6	40 000	20	50 000
SH-7	60 000	50	As Required
SH-8	100 000	100	As Required

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of "NIST Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages. *Editorial changes, not affecting the type or metrological content, corrected this certificate.


Tim Tyson
Chairman, NCWM, Inc.


Randy Jennings
Chairman, National Type Evaluation Program Committee
Issued: October 29, 2010

1135 M Street, Suite 110 / Lincoln, Nebraska 68508

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Cardinal Scale Manufacturing Co.

Hopper Scale / SH Series

Application: Bulk material weighing of relatively free flowing materials.

Identification: The identification information is located on an identification badge attached to the side of the transverse lever.

Device Description: The weighing element is a mechanical lever system with hardened and ground pivots and bearings. The lever system is suspended from a structure not furnished by Cardinal. The means of suspension is through hanger bolts and self-aligning bearing loops.

The load receiving element is a hopper or tank not furnished by Cardinal. The physical dimensions of the weighing element are custom designed to fit the load receiving element.

The indicating element may be any approved and compatible indicator type. If a mechanical weighbeam or mechanical dial is used, it is attached to the weighing element by means of a steelyard and draft rod assembly. If an electronic indicating element is used, it is attached to an approved and compatible load cell located in the steelyard rod.

Test Conditions: This Certificate supersedes Certificate of Conformance Number 88-016PN and is issued without additional testing to upgrade the Certificate from a status of provisional to full. NTEP policy permits a pre-NTEP Certificate of Conformance to be upgraded from provisional to full provided no unfavorable comments are received during the comment period. Since no unfavorable comments were received on this device, this Certificate is issued as a full NTEP Certificate of Conformance. The test conditions for Certificate of Conformance Number 88-016PN are listed below for reference.

Certificate of Conformance Number 88-016PN: These scales have received type approval by individual states prior to the establishment of the National Type Evaluation Program. These scales have been in commercial use for many years. Since these devices use mechanical lever systems, they are believed to be unaffected by the influence factors specified under T.N.8. of the Scales Code of NBS Handbook 44. The NTEP Policy and Procedures permit NTEP to issue Certificates of Conformance based upon the approvals granted by PRE-NTEP jurisdictions. This Certificate was issued on this basis without formal NTEP testing.

Pre-NTEP Type Approvals: CA 1974; IL 1959; NY 1967; NC 1961; PA 1959

Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Information Reviewed By: H. Oppermann, T. Gaver (NIST) 88-016PN; L. T. Sebring (NIST) 88-016