



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Weighing/Load Receiving Element
Vehicle Scale, Digital Electronic Modular Design
Models: PRC-I, PRC-H and SRC-I Series
 n_{max} : 10 000
Capacity: 60 000 – 270 000 lb
Platform: 10 to 450 ft by 10 to 16.8 ft.
CLC: 30 ton, 40 ton and 45 tons
Accuracy Class: IIII

Submitted By:

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Standard Features and Options

- The manufacturer's model numbers for the weighing elements are designated with a prefix of XXYYY, where XX is the scale capacity in tons and YYY is the platform length.
- "PRC" indicates a designed for pitless installation and
- "SRC" indicates a scale designed for installation in a pit; however, these devices are not limited to these installations.
- The model number has a suffix "C" for concrete decks and no suffix for steel decks.
- The suffix "H" indicates side rails.

Installations must satisfy the relationships of: $v_{min} \leq d/\sqrt{N}$ where N = number of load cells and nominal capacity (within the range of rated capacities listed on the certificate) $\leq CLC (N - 0.5)$ where N is the number of sections in the scale.

- Minimum Model Span: 10 ft.
- Platform Widths: 10 ft. to 16.8 ft.
- Platform Lengths: 10 ft. to 450 ft.
- Deck Material: Steel or Concrete

Load Cells Used:

- Cardinal Scale Manufacturing Company models DB-50000S and DB-75000S (NTEP CC Number 97-133)
- Cardinal SCA series load cells (NTEP CC Number 89-042)
- Cardinal SST series load cells (NTEP CC Number 05-076) or Metrologically Equivalent Load Cells That Have an Active NTEP Certificate of Conformance

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.

Randy Jennings
Chairman, NCWM, Inc.

Judith L. Cardin
Chairman, National Type Evaluation Program Committee
Issued: March 11, 2010

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Cardinal Scale Manufacturing Company

Weighing/Load Receiving Element / PRC-I, PRC-H and SRC-I Series

Application: General purpose vehicle weighing.

Identification: The identification plate is affixed to the load receiving element at the point where the signal leaves the scale.

Sealing: The junction box can be sealed with a physical seal.

Test Conditions: This Certificate supersedes Certificate of Conformance Number 95-162A1 and is issued to allow the use of double-ended shear beam load cells and to increase the width of the platform. A Model 10080 SRC-I-C was submitted for evaluation (200,000 lb x 20 lb, five section, 80 ft x 14 ft, 45 ton CLC). The scale was interfaced with a Cardinal Model 825 weight indicator (NTEP Certificate of Conformance Number 08-046). The scale was tested using 81 000 lb of known test weights to perform increasing and decreasing load and shift tests. The 81 000 lbs was also used to perform mid-span tests. A strain load test was conducted using 81 000 lbs of known test weights to a maximum load of 160 000 lbs. Previous test conditions are listed below for reference.

Certificate of Conformance Number 95-162A1: This Certificate supersedes Certificate of Conformance Number 95-162 and is issued to increase the maximum CLC from 40 tons to 45 tons in accordance with section 7.2 of NCWM Publication 14. The manufacturer has submitted acceptable evidence attesting to the increased CLC. This certificate is issued without additional testing.

Certificate of Conformance Number 95-162: This Certificate supersedes Certificates of Conformance Numbers 88-061A1 and 88-224 and is issued to combine the two certificates. Based on information received from the manufacturer, the models PRC-I, PRC-H and SRC-I are of the same design and should be on the same certificate. The original test conditions are repeated for reference.

Certificate of Conformance Number 88-061A1: This Certificate supersedes and replaces Certificate of Conformance Number 88-061 and is issued to change the scale length from a minimum of 60 ft to a minimum of 10 ft. Scale lengths from 10 ft to 60 ft are listed on Report of Test No. 435 for the Model SRC.

Certificate of Conformance Number 88-061: This Certificate supersedes and replaces Certificate of Conformance Number 88-061PN and is issued to upgrade the status of the certificate from Pre-NTEP certificate to full and to include the new load cell models 50K-SCA (CC 89-042A1) and 50K-SCD (CC 89-071), which replace the model 50K-HDD that is no longer manufactured. No comments were received from the States concerning CC No. 88-061PN. If no unfavorable comments are received concerning a pre-NTEP certificate, NTEP policy and procedures permit the Pre-NTEP certificate to be upgraded to a full Certificate of Conformance.

Certificate of Conformance Number 88-061PN: The vehicle scale weighing element was evaluated previously and received Report of Test Numbers 435 and 751. The load cell assembly has been modified, and the scale uses load cells that have been evaluated for compliance with the influence factor requirements. The digital indicator is Cardinal Model 738 (Certificate of Conformance No. 86-035) and the load cell is Cardinal Model 50K-HDD compression type (Certificate of Conformance No. 87-083P). The new load cell assembly was tested as part of the evaluation of the Cardinal Model PRC-I Scale (CC No. 88-224P). This certificate is issued based upon the evaluation of the PRC-I, the previous evaluation of the weighing element, and the evaluations of the indicator and load cells. This certificate is issued as a provisional certificate due to the provisional Certificate of Conformance issued to the load cell used in the scale.

Certificate of Conformance Number 88-224: The manufacturer is now using Cardinal Model 50K-SCA load cells in this scale. The load cells have been evaluated and received a full Certificate of Conformance. Based upon the full Certificate of Conformance issued to the load cells, this Certificate is upgraded to a full Certificate of Conformance. This Certificate supersedes Certificate of Conformance No. 88-224P.



Cardinal Scale Manufacturing Company

Weighing/Load Receiving Element / PRC-I, PRC-H and SRC-I Series

Certificate of Conformance Number 88-224P: The vehicle scale was tested under the criteria for vehicle scale capacities as adopted by the NCWM on July 20, 1988. The criteria were for a concentrated load capacity of 72000 lb, a section capacity of 90 000 lb and a nominal capacity of 200 000 lb. The scale was tested at all sections and at midspan between each pair of sections using 72 000 lb of known standards. A strain load test was conducted to 162 240 lb on each end of the scale using 72 000 lb of known standards. The scale was used for approximately 30 days and the tests were repeated. The results were within the applicable acceptable tolerances specified in Handbook 44. This certificate is issued as a Provisional Certificate because a Provisional Certificate has been issued to the load cells used in the scale.

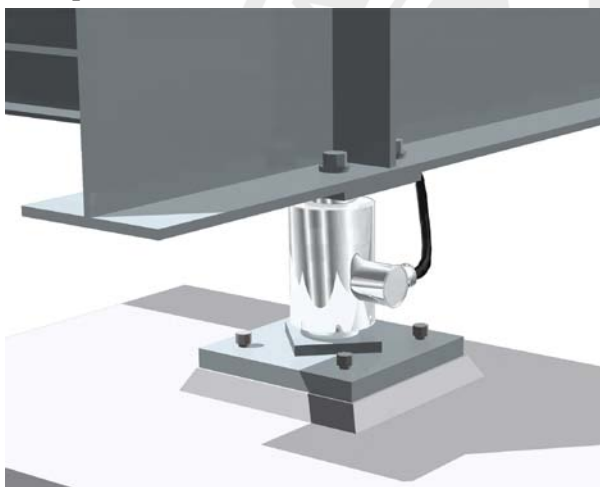
Evaluated By: D. Phillips (KS), H. Oppermann (NIST) 95-162; Terry Davis (KS) 95-162A2

Type Evaluation Criteria Used: NIST, Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, 2010. NCWM, Publication 14: Weighing Devices, 2009.

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

Information Reviewed By: C. V. Cotsoradis (NIST) 95-162; S. Patoray (NCWM) 95-162A1; J. Truex (NCWM) 95-162A2

Example of Device:



Compression Load Cell Mounting
(other load cell mounting available)



Model XXXXYYYSRC-I-C Scale