

***National Type Evaluation Program
Certificate of Conformance
for Weighing and Measuring Devices***

For:

Vehicle Scale Weighing/Load Receiving Element
Mechanical Lever System
Model: "M" Series
 n_{\max} : 9450 e_{\min} : 20 lb
Capacity: 70 000 lb to 189 000 lb
CLC: 35 000 lb to 80 000 lb
Platform: see below
Accuracy Class: IIII

Submitted by:

Holtgreven / Loadmaster Scale
420 E. Lincoln St.
Findlay, OH 45840
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Standard Features and Options

Maximum platform length: 105 ft
Minimum platform length: 12 ft
Maximum platform width: 12 ft
Minimum platform width: 7 ft

Maximum distance between sections: 28 ft

Nominal capacity must be less than, or equal to the CLC times the number of sections minus one-half

Platform material: Concrete or steel

Installation: Pipe lever system (125:1 ratio)

An "M" series levertronic scale was submitted for the purpose of this evaluation

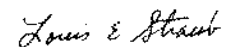
Load cell: Revere Transducers Model 363-B10-1.5K (CC No. 87-063A) or NTEP approved equivalent
Incell Model TSC-1.5KLE (CC No. 98-027) or NTEP approved equivalent.

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

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of 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.



Ross J. Andersen
Chairman, NCWM, Inc.



Louis E. Straub
Chairman, National Type Evaluation Program Committee
Issue date: February 7, 2003

**Holtgreven / Loadmaster Scale
Vehicle Scale Weighing/Load Receiving Element
Model: "M" Series**

Application: General-purpose vehicle scale.

Identification: The identification badge is attached to the main I beam near the center of the scale.

Sealing: All electronic metrological adjustments are made through the indicating element.

Test Conditions: This Certificate supersedes Certificate of Conformance 92-117A1 and is issued to shorten the length to 12 feet. An "M" Series weighing element (90 000 lb x 20 lb, 24feet x 12feet, 2 section, 60 000 lb CLC) was tested. The mechanical weighing element was interfaced with a Tara Model TR-1-NK indicating element (CoC Number 91-077) and an Incell Model TSC-1.5 KLE single load cell for the purpose of this evaluation. The scale was tested initially by using 66 000 lb of known test weights performing several increasing/decreasing load shift tests. The 60 000 lb were also used to perform mid-span tests. Strain load tests were conducted using an additional 25 000 lb of known test weight up to a total of 91 000 lb. Do to the good repeatability and shorting of the weighing element the follow-up test was waved. The previous test condition is listed below for reference.

Certificate of Conformance 92-117A1: This Certificate supersedes Certificate of Conformance 92-117 and is issued without additional testing to clarify and correct the width and the span between sections. The previous test condition is listed below for reference.

Certificate of Conformance 92-117: An "M" Series weighing element (140,000 lb x 20 lb, 70'x 10', 4 section, 70,000 lb CLC) was tested. The mechanical weighing element was interfaced with a GSE Model 550 indicating element and a Revere Transducers Model 363-B10-1.5K single load cell for the purpose of this evaluation. The scale was tested initially by placing 18,000 lb of test weights over each load bearing point. Increasing/decreasing load tests were performed using 70,000 lb of known test weights. The 70,000 lb were also used to perform mid-span tests. Strain load tests were conducted using 70,000 lb of known test weight up to a total of 139,200 lb. The scale was used for over 450 weighings, 21 days, then tested again. The shift and mid-span tests were repeated using 70,000 lb of known test weights. Strain load tests were again conducted up to a total of 142,160 lb.

The results of the evaluation indicate the device is capable of meeting the applicable requirements of Handbook 44.

Type Evaluation Criteria Used: NIST Handbook 44, 2002 Edition

Tested By: B. Badenhop (OH), P. O'Connor (OH) 92-117; T. Lucas (OH) 92-117A2

Reviewed by: S. Patoray (NCWM) 92-117A1, 92-117A2, L. Bernetich (NCWM) 92-117A2