

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

**For:**

Vehicle Scale Weighing Element  
Mechanical Lever System  
Models: SR and SRL Series\*  
 $n_{\max}$ : 10 000  $e_{\min}$ : See Page 2  
Capacity: 10 tons to 150 tons (See Page 2)  
Platform: See Page 2  
CLC: 10 tons to 90 tons (See Page 2)

**Submitted by:**

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**Standard Features and Options**

\*The suffix "L" indicates an electro-mechanical scale. The type "SRL" has an NTEP-approved and compatible load cell on the end of the transverse lever.

Models and specifications are shown on Page 2.

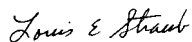
**Options:** Mechanical indicator  
Digital electronic indicator\*

\* The load cell must meet the formula  $v_{\min} \leq d/(\sqrt{N} \times \text{scale multiple})$  where N = number of load cells

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

Effective Date: June 7, 1999



Louis E. Straub  
Chairman, NCWM, Inc.



G. Weston Diggs  
Chairman, National Type Evaluation Program Committee

Issue date: August 17, 1999

Note: The National Conference on Weights and Measures does not "approve", "recommend", or "endorse" any proprietary product or material, either as a single item or as a class or group. Results shall not be used in advertising or sales promotion to indicate explicit or implicit endorsement of the product or material by the NCWM.

This is a reissuance by the NCWM of a Certificate of Conformance already issued by the National Institute of Standards and Technology.

**Cardinal Scale Mfg. Co.**  
**Vehicle Scale Weighing Element**  
**Models: SR and SRL Series**

**Application:** For weighing vehicles as single draft static loads.

**Models and Specifications:**

Model Number	Platform (ft)	Capacity (tons)	$e_{\min}$ (lb)	$n_{\max}$	CLC* (tons)	Number of Sections
1018 SR	18 x 9	10	5	4 000	10	2
1522 SR	22 x 9	15	5	6 000	15	2
2024 SR	24 x 10	20	5	8 000	20	2
3024 SR	24 x 10	30	10	6 000	30	2
3034 SR	34 x 10	30	10	6 000	30	2
30343 SR	34 x 10	30	10	6 000	20	3
40403 SR	40 x 10	40	10	8 000	20	3
5045 SR	45 x 10	50	10	10 000	30	3
5050 SR	50 x 10	50	10	10 000	30	4
5060 SR	60 x 10	50	10	10 000	30	4
5070 SR	70 x 10	50	10	10 000	30	4
501207 SR	120 x 10	60	20	6 000	30	7
6045 SR	45 x 10	60	20	6 000	30	4
6050 SR	50 x 10	60	20	6 000	30	4
6060 SR	60 x 10	60	20	6 000	30	4
6070 SR	70 x 10	60	20	6 000	30	4
7550 SR	50 x 10	75	20	7 500	35	4
7560 SR	60 x 10	75	20	7 500	35	4
75705 SR	75 x 10	75	20	7 500	30	5
8060 SR	60 x 10	80	20	8 000	45	4
8070 SR	70 x 10	80	20	8 000	45	4
10060 SR	60 x 10	100	20	10 000	60	4
100100 SR	100 x 10	100	20	10 000	60	6
15070 SR	70 x 16	150	50	6 000	90	4

\* CLC is 100% of section capacity

**Device Description:** The weighing element is a mechanical lever system with hardened and ground pivots and bearings. The connection between the levers and the load receiving element is a double-link suspension system.

The load receiving element is a fabricated steel weighbridge articulated at each section. A concrete or steel deck completes this element.

The indicating element can be a mechanical weighbeam or mechanical dial of an approved and compatible type. The indicating element is attached to the weighing element by means of a steelyard and draft-rod assembly.

A load cell can be added to the steelyard or draft-rod assembly to provide both a mechanical and an electronic indicating element. In this case, the model is still "SR" and the load cell and electronic indicator must be of approved and compatible types.

The mechanical indicating element can be eliminated and an NTEP-approved and compatible load cell added to the end of the transverse lever. This changes the model to "SRL." An approved and compatible electronic indicating element must then be used.

**Cardinal Scale Mfg. Co.  
Vehicle Scale Weighing Element  
Models: SR and SRL Series**

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

**Test Conditions:** This Certificate supersedes Certificate of Conformance Number 88-012PN 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. CLCs were added based on NTEP policy which permits declaring a CLC up to 100% of the section capacity without additional testing. The test conditions for Certificate of Conformance Number 88-012PN are listed below for reference.

**Certificate of Conformance Number 88-012PN:** 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 NIST 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:** AL 1958; CA 1970, 1974, 1978, 1984; CT 1960, 1963, 1964; IL 1959, 1961; MA 1965; NJ 1966; NY 1961, 1969, 1976; PA 1959, 1963, 1971

**Information Reviewed By:** H. Oppermann, T. Gaver (NIST) 88-012PN; L. T. Sebring (NIST) 88-012