

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

For:

Force Transducer, Load Cell
Hydraulic Compression
Models: SST Series
 n_{\max} : 10 000, Multiple Cells
Capacity: 200 000 lb to 25 000 lb

Accuracy Class: III L

Submitted by:

Cardinal Scale Manufacturing Co.
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Standard Features and Options

The SST Series is identified by the Model Number SSTXX, where the XX suffix represents the load cell capacity in thousands of pounds.

The SST Series load cell is to be used only with a Cardinal pressure transducer (Model PTG-3K) and Cardinal weight indicator containing the appropriate linearity compensation algorithm. The complete system consists of one or more hydraulic load cell / Cardinal pressure transducer pairs connected to a Cardinal indicator. The outputs of the pressure transducers are summed at the junction box and connected to the input of the indicating element.

Load Cell Parameters:

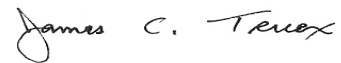
Model Number	Capacity (lb)	V_{MIN} (lb)	Minimum Dead Load (lb)
SST25	25 000	1.9	250
SST50	50 000	3.8	500
* SST75	75 000	5.7	750
SST100	100 000	7.6	1000
SST150	150 000	11.4	1500
SST200	200 000	15.2	2000
* Two load cells submitted for evaluation			

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.



Don Onwiler
Chairman, NCWM, Inc.



James C. Truex
Chairman, National Type Evaluation Program Committee
Issue date: September 7, 2005

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.

**Cardinal Scale Manufacturing Co.
Load Cell, Hydraulic Compression
Models: SST Series**

Application: The load cells may be used in Class III L scales for multiple cell applications consistent with the model designations, number of scale divisions, and parameters specified in this certificate. Load cells of a given accuracy class may be used in applications with lower accuracy class requirements provided the number of scale divisions, the V_{\min} value, and temperature range are suitable for the application. The manufacturer may market the load cell with fewer divisions (n_{\max}) and with greater V_{\min} values than those listed on the certificate. However, the load cells must be marked with the appropriate n_{\max} and V_{\min} for which the load cell may be used.

Identification: A pressure sensitive identification badge containing the manufacturer, model designation, and serial number is located on the load cell and associated pressure transducer. All other required information, if not marked on the load cell, is contained in an accompanying document including the serial number of the load cell.

Configuration: The SST series hydraulic compression load cell is fluidly coupled via a tube to the PTG-3K pressure transducer. The outputs from the pressure transducers are electrically summed in a junction box and connected to an appropriate Cardinal indicating element containing a fixed linearity compensation algorithm. The indicating element will bear a mark stating that it is for use only with SST series load cells.

Test Conditions: Two Model SST75 (75 000-lb capacity) load cells were tested by the NIST Force Group, using deadweights as the reference standard. The load cells were used with Cardinal PTG-3K pressure transducers, which are considered to be part of the metrological system included in this evaluation. The indicating element was a Cardinal Model 788 weight indicator (NTEP CC 97-077). The load cells were tested over a temperature range of -10°C to $+40^{\circ}\text{C}$ with three separate loading cycles for each cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure. The data were analyzed for multiple load cell applications.

Evaluated By: T. Bartel, NIST Force Group

Type Evaluation Criteria Used: NIST Handbook 44, 2005 Edition, NCWM Publication 14, 2005 Edition

Conclusion: The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

Information Reviewed By: S. Patoray (NCWM), L. Bernetich (NCWM)