

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

For:

Bench and Counter Scale
Digital Electronic
Models: HV-XXXGV and HV-XXXGL Series*
 n_{max} : 3000
Capacities: 15 kg (30 lb), 60 kg (150 lb), 220 kg
(500 lb)
See Page 2 for specific models, scale parameters and platform sizes

Accuracy Class: III

Submitted by:

A&D Engineering
1555 McCandless Drive
Milpitas, CA 95035
Contact: Steve Lipham
Tel.: (408) 263-5333
Fax: (408) 263-0119

Standard Features and Options

Automatic multiple range operation
Gross/net display
lb/kg/oz conversion
Initial zero setting mechanism (IZSM)
Semi-automatic (push-button) tare
RS-232C serial interface
Semi-automatic (push-button) zero setting mechanism
Automatic zero setting mechanism (AZSM)
Piece counting: "The counting feature is not legal for trade" is labeled on the indicator face

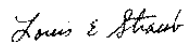
* Models with the V suffix have a fluorescent display and use AC line power.
the L suffix have a liquid crystal display and use six "D" size batteries or an AC adaptor as a power source.

Option: Built-in dot matrix printer on V suffix models

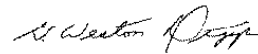
Temperature Range: -10° C to 40° C (14° F to 104° F)

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: July 18, 2000



Louis E. Straub
Chairman, NCWM, Inc.



G. Weston Diggs
Chairman, National Type Evaluation Program Committee

Issue date: August 23, 2000

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.

A&D Engineering
Bench and Counter Scale
Models: HV-XXKGV and HV-XXKGL Series

Model Designation:

Model	Platform	Capacities With Multiple Ranges and Division Sizes		
HV-15KGV/L	250 mm x 250 mm	0 to 3 kg x 0.001 kg 3 to 6 kg x 0.002 kg 6 to 15 kg x 0.005 kg	0 to 6 lb x 0.002 lb 6 to 15 lb x 0.005 lb 15 to 30 lb x 0.01 lb	0 to 96 oz x 0.05 oz 96 to 240 oz x 0.1 oz 240 to 480 oz x 0.2 oz
HV-60KGV/L	330 mm x 424 mm	0 to 15 kg x 0.005 kg 15 to 30 kg x 0.01 kg 30 to 60 kg x 0.02 kg	0 to 30 lb x 0.01 lb 30 to 60 lb x 0.02 lb 60 to 150 lb x 0.05 lb	0 to 480 oz x 0.2 oz 480 to 960 oz x 0.5 oz 960 to 2400 oz x 1 oz
HV-200KGV/L	390 mm x 530 mm	0 to 60 kg x 0.02 kg 60 to 150 kg x 0.05 kg 150 to 220 kg x 0.1 kg	0 to 150 lb x 0.05 lb 150 to 300 lb x 0.1 lb 300 to 500 lb x 0.2 lb	0 to 2400 oz x 1 oz 2400 to 4800 oz x 2 oz 4800 to 8000 oz x 5 oz

Application: General purpose bench scale.

Identification: The manufacturer's identification, model number, and capacity by division size is located on the face of the indicator. The serial number is on a pressure sensitive self-destructive label on the left side of the indicator head.

Sealing: The device can be sealed by means of a wire security seal threaded through two screws which hold the door on the rear of the indicator head, preventing access to the calibration switch.

Test Conditions: The emphasis of the evaluation was on device design, marking, performance, and compliance with influence factor requirements. Two models were submitted for evaluation: the HV-15KGL and the HV-200KGV. Several increasing/decreasing load and shift tests were performed. The devices were tested over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). A load of approximately one-half capacity was applied to the scale over 100 000 times with accuracy tests performed at approximately every 25 000 times. Tests were also conducted with line voltages of 100 VAC and 130 VAC on the V suffix model and 6 VAC and 9.9 VDC on the L suffix model.

The results of the evaluation indicate the devices comply with applicable requirements of NIST Handbook 44.

Type Evaluation Criteria Used: NIST Handbook 44, 2000 Edition.

Tested By: K. Jones (CA)