Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Notification of Change
Certificate of Approval No 6/9C/250A
Change No 3

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

The following changes are made to the approval documentation for the

A & D Mercury Model HV-150KA1 Weighing Instrument

submitted by A & D Mercury Pty Ltd
(now A & D Australasia Pty Ltd)
32 Dew Street
Thebarton SA 5031.

A. In Certificate of Approval No 6/9C/250A dated 31 August 2005;

1. The Condition of Approval referring to the review of the approval should be amended to read:

   "This approval becomes subject to review on 1 June **2015**, and then every 5 years thereafter."

   Note: The review date was previously amended by Notification of Change No 2 dated 22 June 2005.

2. The FILING ADVICE should be amended by adding the following:

   "Notification of Change No 1 dated 22 April 2002
   Notification of Change No 2 dated 22 June 2005
   Notification of Change No 3 dated 15 December 2010"

B. In Certificate of Approval No 6/9C/250A and its Technical Schedule Variation No 1 both dated 30 August 2004, and in the Technical Schedule dated 22 May 2000, the references to the name of the submittor should be amended to read:

   "A & D **Australasia** Pty Ltd"

C. In Technical Schedule No 6/9C/250A dated 22 May 2000, the 1st paragraph of the TEST PROCEDURE should be amended to read, in part:

   "… any relevant tests specified in **the Uniform Test Procedures**."

Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the *National Measurement Regulations 1999*.

6/9C/250A
22 May 2000

National Standards Commission

12 Lyonpark Road, North Ryde NSW

Certificate of Approval

No 6/9C/250A

Issued under Regulation 63
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the

A & D Mercury Model HV-150KA1 Weighing Instrument

submitted by A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031.

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This Certificate is issued upon completion of a review of NSC approvals Nos 6/9C/250 and 6/9C/215A.

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CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 June 2005, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 6/9C/250A and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the Commission and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with the Commission's Document 106.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0/A.

DESCRIPTIVE ADVICE

Pattern: approved 15 May 2000

- An A & D Mercury model HV-150KA1 self-indicating weighing instrument of 150 kg maximum capacity.

Variants: approved 15 May 2000

1. Certain other models as listed in Table 1.
2. Certain baseworks of this approval fitted with waterproof load cells.
3. Any basework of this approval with a compatible Commission-approved indicator.

Technical Schedule No 6/9C/250A describes the pattern and variants 1 to 3.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 6/9C/250A dated 22 May 2000
Technical Schedule No 6/9C/250A dated 22 May 2000 (incl. Test Procedure)
Figures 1 and 2 dated 22 May 2000

Signed by a person authorised under Regulation 63 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

TECHNICAL SCHEDULE No 6/9C/250A

Pattern: A & D Mercury Model HV-150KA1 Weighing Instrument.

Submittor: A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031.

1. Description of Pattern

An A & D Mercury model HV-150KA1 self-indicating weighing instrument (Figure 1) of 150 kg maximum capacity and approved for use with up to 3000 verification scale intervals.

1.1 Basework

The model HV-150KB1 basework (Figure 1) has the load receptor fully supported by a single load cell.

The load receptor has maximum nominal dimensions of 390 x 530 mm.

1.2 Load Cells

An A & D model LC4103-K150 (also known as a model 150K-1) load cell of 150 kg capacity is used, mounted as shown in Figure 2.

1.3 Indicator

An A & D model HV digital indicator is used.

The indicator, which may be remote from the basework, may be fitted with an output socket for the connection of an auxiliary or a peripheral device.

A display check is initiated whenever power is applied.

1.3.1 Zero

Instruments may be fitted with an automatic zero setting device which sets zero to within ±0.25 e whenever the instrument comes to rest more than 0.5e below zero.

The zero-tracking device automatically corrects zero to within ±0.25 e whenever the instrument comes to rest within ±0.5e of zero.

The initial zero-setting device has a nominal range of not more than 20% of the maximum capacity of the instrument.

The instrument has a semi-automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument.

1.3.2 Tare

A semi-automatic subtractive taring device of up to the maximum capacity of the instrument may be fitted.

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1.3.3 Additional Features

Instruments may be fitted with a counting function and/or with a facility for 'Under' and 'Over' values to be entered to indicate a target range, for a visual and audible indication of when the target is reached, and for switching of outputs relating to the target range.

Indications other than the indications of measured mass (i.e. gross, tare, net) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

1.4 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

1.5 Sealing Provision

Provision is made for the calibration adjustments in the indicator to be sealed by means of a lead and wire seal and the sealing screw provided on the rear panel.

1.6 Markings

Instruments are marked with the following:

Manufacturer's mark, or name written in full	A & D Mercury Pty Ltd
Indication of accuracy class	(III)
Maximum capacity	*Max* ..... kg *
Minimum capacity	*Min* ..... kg *
Verification scale interval	*e* = ... kg *
Serial number of the instrument	.....
Pattern approval mark for the instrument	NSC No 6/9C/250A
Pattern approval mark for the indicator	NSC No S....

* These markings shall also be repeated adjacent to each reading face, if they are not already located there.

2. Description of Variants

2.1 Variant 1

Certain other model instruments incorporating the model baseworks as listed in Table 1. The model HW-300KA4 uses a model HW-D indicator as described in the documentation of NSC approval No S354.

TABLE 1

Instrument Model:	HV-30KA2	HV-60KA1	HW-300KA4
Basework Model:	HV-30KB2	HV-60KB1	HW-300KB4

Approved Models of Instruments - Variant 1

2.2 Variant 2

The models HV-30KB2, HV-60KB1 and HV-150KB1 baseworks of this approval fitted with silicon-dipped load cells for waterproofing, in which case the model number has a WP suffix, e.g. the HV-30KB2 becomes HV-30KB2WP.

2.3 Variant 3

Any basework of this approval (Table 2) used with a compatible Commission-approved (by Supplementary Certificate) indicator provided the conditions set out below are met.

The limiting characteristics of the baseworks are given in Table 2.

The conditions to be met are:

- The excitation voltage used is within the range approved for the baseworks.
- The maximum load applied to the basework (live load plus any dead load) does not exceed the load cell maximum capacity.
- The verification scale interval (e_1 for multi-interval) is not less than the minimum value specified (for single or multi-interval operation as applicable).
- The number of verification scale intervals is less than or equal to the n_{max} value specified.
- The signal voltage per verification scale interval is no less than the minimum sensitivity value per verification scale interval for the indicator (as specified in the approval documentation for the indicator), i.e.

  Indicator Sensitivity < 1000 x Ex x LC_Sens x e / Emax

  where Ex = Excitation from indicator (V)

  LC_Sens = Load cell sensitivity (mV/V)

  Emax = Load cell maximum capacity (nominal) (kg)

  e = verification scale interval of the instrument (kg). For multi-interval instruments use e_1.

  Indicator Sensitivity = Minimum sensitivity value per verification scale interval for the indicator (µV)

2.3.1 Markings

(a) The indicator is marked and carries notices in accordance with its NSC approval documentation. The indicator is also marked with the pattern approval mark (NSC No 6/9C/250A) for the basework.

(b) If the indicator used is not the model HV indicator as described in clause **1.3 Indicator** nor the model HW-D indicator as described in clause **2.1 Variant 1**, then the basework is marked with the following,

Manufacturer's mark, or name written in full	A & D Mercury Pty Ltd
Maximum capacity	*Max* ..... kg
Pattern approval mark for the instrument	NSC No 6/9C/250A

TABLE 2

Basework model	HV-30KB2 *	HV-60KB1 *	HV-150KB1 *	HW-300KB4
Maximum capacity	30 kg	60 kg	150 kg	300 kg
Maximum number of verification scale intervals	3000	3000	3000	3000
Minimum value of verification scale interval	0.01 kg	0.02 kg	0.05 kg	0.1 kg
Maximum load receptor (mm)	326x420	390x530	390x530	600x700
Load cells:				
Model number	LC4102-K030 or 30K-2	LC4103-K060 or 60K-1	LC4103-K150 or 150K-1	LC4204-K300
Number of load cells	1	1	1	1
Output rating (nominal)	1 mV/V	1 mV/V	1 mV/V	1.5 mV/V
Input impedance (nominal)	400 Ω	400 Ω	400 Ω	400 Ω
Supply voltage (AC or DC)	12 V	12 V	12 V	12 V
Cable length (±0.1 m)	1.5 m	2 m	2 m	5 m
Number of leads (plus shield)	4	4	4	4

* Includes 'WP' versions of baseworks as described for Variant 2.

Approved Models and Capacities of Baseworks

TEST PROCEDURE

Instruments should be tested in conjunction with any tests specified in the approval documentation for the indicator used, and in accordance with any relevant tests specified in the Inspector's Handbook.

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors for increasing and decreasing loads on initial verification/ certification for loads, *m*, expressed in verification scale intervals, e, are:

±0.5*e* for loads $0 \le m \le 500$;
±1.0*e* for loads $500 < m \le 2\,000$; and
±1.5*e* for loads $2\,000 < m \le 10\,000$.

6/9C/250A
22 April 2002

National Standards Commission

12 Lyonpark Road, North Ryde NSW

Notification of Change

Certificate of Approval No 6/9C/250A

Change No 1

The following change is made to the approval documentation for the

A & D Mercury Model HV-150KA1 Weighing Instrument

submitted by A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031.

In Certificate of Approval No 6/9C/250A dated 22 May 2000, the following Condition of Approval should be added:

"This approval shall NOT be used in conjunction with General Certificate No 6B/0."

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

6/9C/250A
22 June 2005

Australian Government

National Measurement Institute

12 Lyonpark Road, North Ryde NSW 2113

Notification of Change
Certificate of Approval No 6/9C/250A
Change No 2

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

The following change is made to the approval documentation for the

A & D Mercury Model HV-150KA1 Weighing Instrument

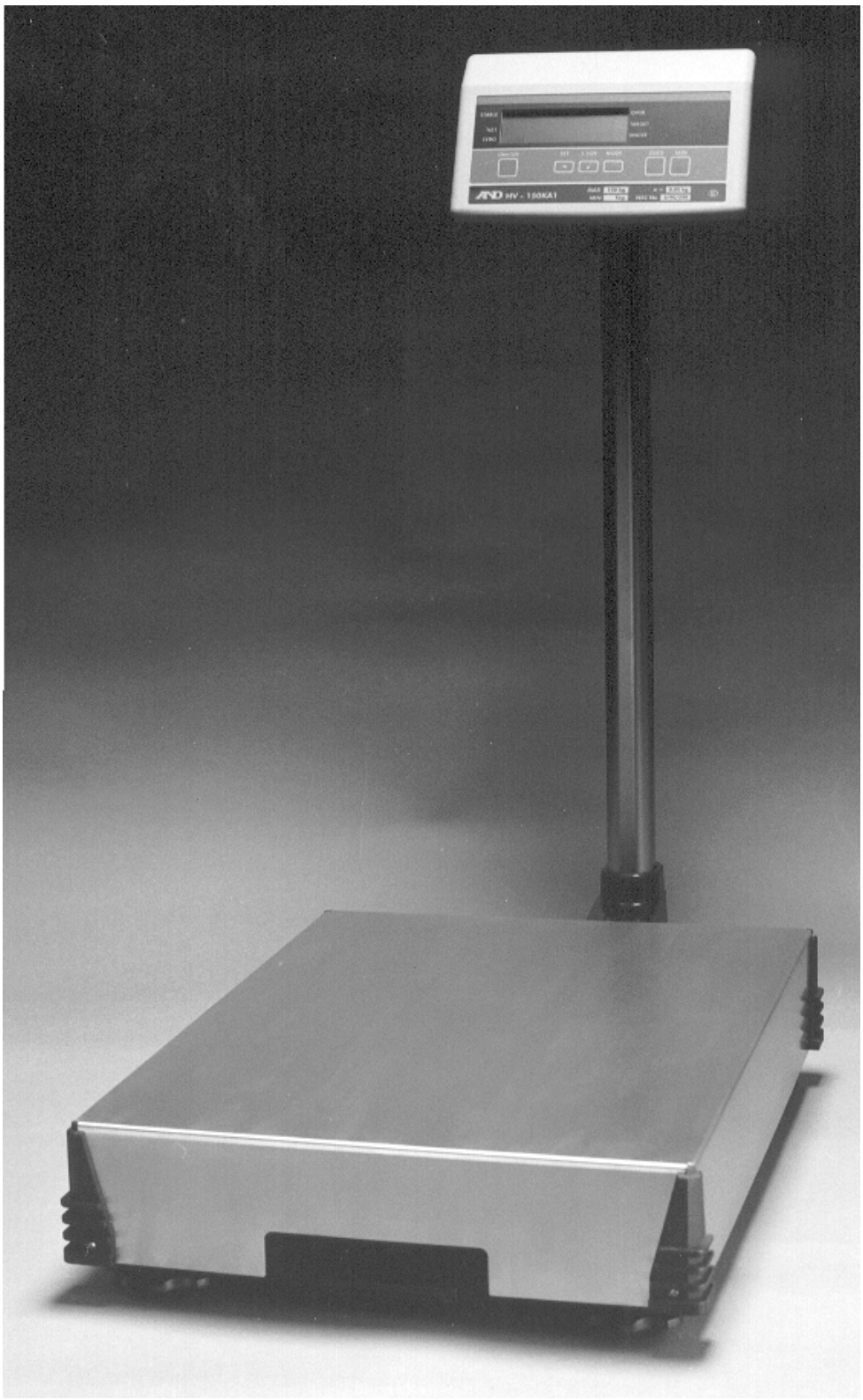
submitted by A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031.

In Certificate of Approval No 6/9C/250A dated 30 August 2004, the Condition of Approval referring to the review of the approval should be amended to read:

> "This approval becomes subject to review on 1 June 2010, and then every 5 years thereafter."

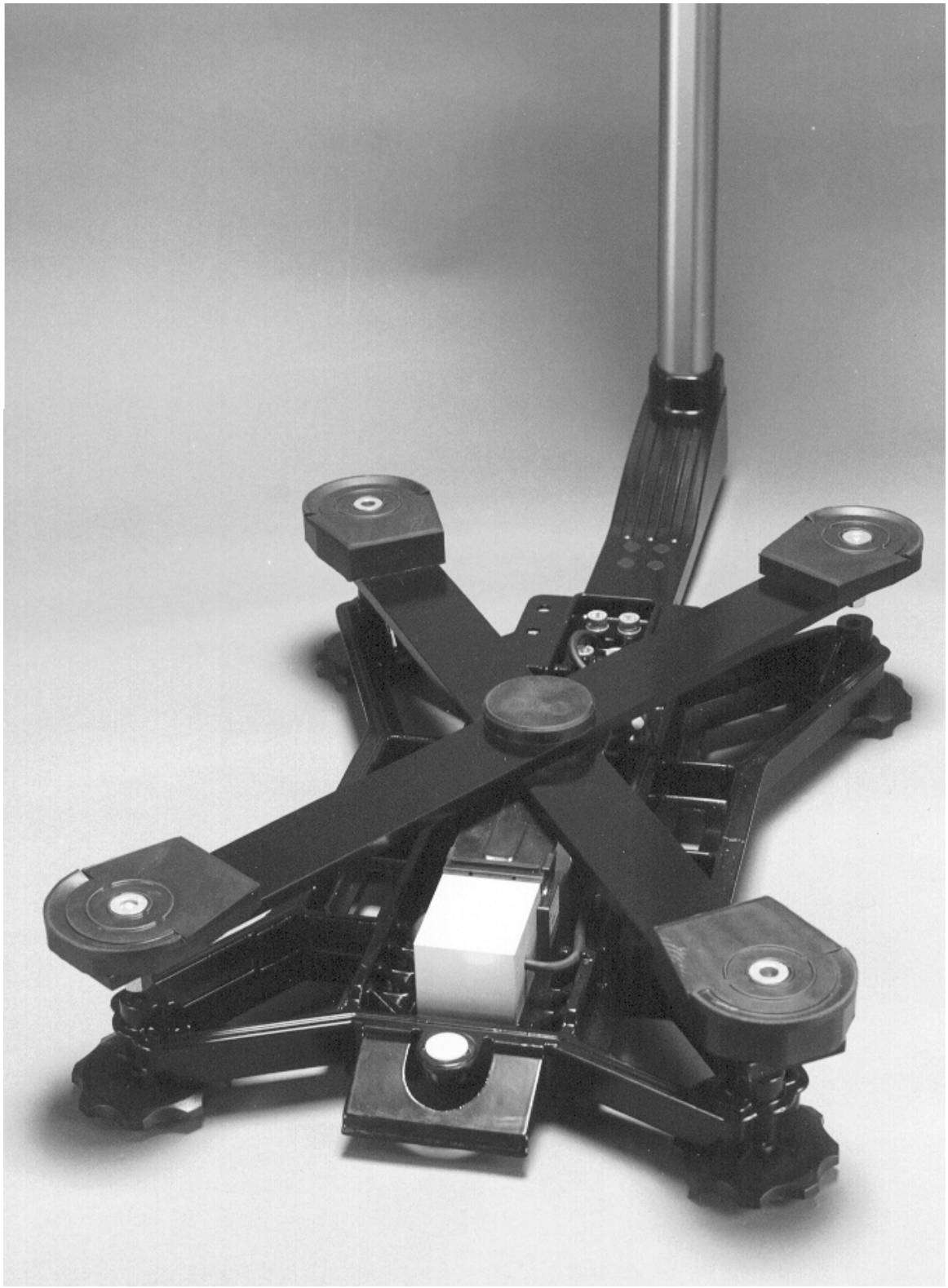
Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the National Measurement Regulations 1999.

FIGURE 6/9C/250A - 1



A & D Mercury Model HV-150KA1 Weighing Instrument

FIGURE 6/9C/250A - 2



Typical HV Series Basework