



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Notification of Change

Certificate of Approval No 6/4C/230

Change No 1

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 Model EW-150i 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 6/4C/230 dated 22 March 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 March **2015**, and then every 5 years thereafter.”
2. The FILING ADVICE should be amended by adding the following:
- “Notification of Change No 1 dated 15 December 2010”
- B. In Certificate of Approval No 6/4C/230 and its Technical Schedule both dated 22 March 2005, the references to the name of the submitter should be amended to read:
- “A & D **Australasia** Pty Ltd”

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

A handwritten signature in black ink, appearing to be 'M. J. ...', written over a horizontal line.



Australian Government
**National Measurement
Institute**

12 Lyonpark Road, North Ryde NSW 2113

Certificate of Approval
No 6/4C/230

Issued by the Chief Metrologist under Regulation 60
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 Model EW-150*i* 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.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 March **2010**, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 6/4C/230' and only by persons authorised by the submittor.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) 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 document NMI P 106.

The National Measurement Institute 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 8 February 2005

- The A & D model EW-150*i* self-indicating non-automatic multiple-range weighing instrument of high accuracy class (II) of 150 g maximum capacity.

Variant: approved 8 February 2005

1. Models EW-1500*i* and EW-12K*i* medium accuracy class (III) instruments.

Technical Schedule No 6/4C/230 describes the pattern and variant 1.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 6/4C/230 dated 22 March 2005

Technical Schedule No 6/4C/230 dated 22 March 2005 (incl. Table 1, and Test Procedure)

Figures 1 and 2 dated 22 March 2005

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



TECHNICAL SCHEDULE No 6/4C/230

Pattern: A & D Model EW-150*i* Weighing Instrument

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

1. Description of Pattern

The A & D model EW-150*i* self-indicating multiple-range non-automatic weighing instrument of high accuracy class II of 150 g maximum capacity (Figure 1 and Table 1).

Instruments may only be operated in the gram mode.

Instruments are fitted with a single load cell and have a liquid crystal display (LCD).

The range in use is indicated by 'R1' or 'R2' being displayed. The low range (R1) has a verification scale interval (e_1) of 0.02 g and a maximum capacity (Max_1) of 60 g, while the high range (R2) has a verification scale interval (e_2) of 0.05 g and a maximum capacity (Max_2) of 150 g.

Instruments are approved for use over a temperature range of +5°C to +40°C, and are so marked.

Instruments are not for trading direct with the public, and are so marked.

Power supply may be either:

- 7-10 V DC supplied by an AC/DC mains adaptor or other DC power source; or
- rechargeable batteries.

Note: The AC/DC mains adaptor supplied was an A & D Mercury model TB-172 power supply (8 V DC, 300 mA); the submittor should be consulted regarding the acceptability of alternative power supply units.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

1.1 Zero and Tare

Instruments have an initial zero-setting device with a nominal range of not more than 20% of the maximum capacity of the instrument.

Instruments have a combined semi-automatic zero-setting and subtractive tare balancing device (operated by the 're-zero' key). Operation of this device zeroes the instrument to within $\pm 0.25e$ if the load is within the zero-setting range (4% of the maximum capacity of the instrument), otherwise the instrument is tared.

The subtractive taring device operates up to the maximum capacity of the instrument.

A zero-tracking device may also operate to automatically correct to within $\pm 0.25e$ whenever the instrument comes to rest with the display indicating zero (including net zero).

1.2 Management Functions

Instruments may be fitted with a target weighing function ('HI OK LO'). This function and display are not approved for trade use.

1.3 Display Check

A display check is initiated when the instruments are switched on.

1.4 Levelling

Instruments are provided with adjustable feet and a level indicator, adjacent to which is a level notice stating "Instrument must be level when in use", or similar wording.

1.5 Descriptive Markings and Notices

The instrument model number is shown on the instrument nameplate.

Instruments carry the following markings:

Manufacturer's mark, or name written in full	A & D Company Limited, Japan
Name or mark of manufacturer's agent	A & D Mercury Pty Ltd
Indication of accuracy class	Ⓜ
Pattern approval mark for the instrument	NMI 6/4C/230
For each range:	
Maximum capacity	Max g *
Minimum capacity	Min g *
Verification scale interval	e = g *
Tare capacity	T = - g #
Serial number of the instrument
Special temperature limits	5°C to +40°C

* These markings shall also be shown near the display of the result if they are not already located there.

This marking is required if *T* is not equal to *Max*.

Instruments are not for trading direct with the public, and are so marked.

1.6 Verification/Certification Provision

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

1.7 Sealing Provision

Sealing of the calibration adjustment is provided by preventing access to the switch mounted on the main circuit board. Access to this switch is protected by applying a destructible adhesive label (Figure 2).

2. Description of Variant 1

Certain other models of the EW series of weighing instruments of medium accuracy class (III) as listed in Table 1, namely model EW-1500*i* of 1500 g maximum capacity, and a model EW-12K*i* of 12 000 g maximum capacity.

These models are similar to the pattern (model EW-150*i*) but they have a rectangular load pan instead of the circular pan shown in Figure 1.

Instruments have multiple-ranges (3) with specifications as listed in Table 1.

Instruments are approved as medium accuracy class (III) and are so marked.

TEST PROCEDURE

Instruments should be tested in accordance with any relevant tests specified in the Uniform Test Procedures.

Maximum Permissible Errors at Verification/Certification

For high accuracy class (II) instruments, the maximum permissible errors for increasing and decreasing loads on initial verification/certification for loads, m , expressed in verification scale intervals, e , are:

- $\pm 0.5 e$ for loads $0 \leq m \leq 5\,000$;
- $\pm 1.0 e$ for loads $5\,000 < m \leq 20\,000$; and
- $\pm 1.5 e$ for loads $20\,000 < m \leq 100\,000$.

For medium accuracy class (III) instruments, the maximum permissible errors for increasing and decreasing loads on initial verification/certification for loads, m , expressed in verification scale intervals, e , are:

- $\pm 0.5 e$ for loads $0 \leq m \leq 500$;
- $\pm 1.0 e$ for loads $500 < m \leq 2\,000$; and
- $\pm 1.5 e$ for loads $2\,000 < m \leq 10\,000$.

For multiple-range instruments with verification scale intervals e_1, e_2, \dots , apply e_1 , for zero adjustment, and for maximum permissible errors apply e_1, e_2, \dots , as applicable for the load.

Ensure that instruments are only being used within the special temperature limits stated elsewhere in this Technical Schedule.

TABLE 1

Model Number	Maximum Capacity (<i>Max</i>)	Minimum Capacity (<i>Min</i>)	Verification Scale Interval (<i>e</i>)	Accuracy Class (#)
EW-150 <i>i</i>	60 g	0.4 g	0.02 g	high
	150 g	1 g	0.05 g	
EW-1500 <i>i</i>	300 g	2 g	0.1 g	medium
	600 g	4 g	0.2 g	
	1500 g	10 g	0.5 g	
EW-12K <i>i</i>	3000 g	20 g	1 g	medium
	6000 g	40 g	2 g	
	12 000 g	100 g	5 g	

Approved models of the EW multiple-range series

(#) high accuracy class (II) – medium accuracy class (III)

FIGURE 6/4C/230 – 1



A & D Model EW-150i Weighing Instrument

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FIGURE 6/4C/230 – 2



Destructible Label

Showing Typical Sealing