

National Standards Commission



Certificate of Approval

No 6/9C/215

Issued under Regulation 9
of the
National Measurement (Patterns of Instruments) Regulations

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

AND Model FV-60 Weighing Instrument

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

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

A handwritten signature in black ink, appearing to read 'J. Birch'. The signature is written in a cursive style with a large initial 'J'.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/5/93.

This approval expires in respect of new instruments on 1/5/94.

Instruments purporting to comply with this approval shall be marked NSC No 6/9C/215 and only by persons authorised by the submittor.

Instruments currently marked NSC No P6/9C/215 may have the "P" removed at their next verification/certification.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the drawings and specifications 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 values of the performance criteria (maximum number of scale intervals etc.) applicable to the instrument shall be within the limits specified herein and in any approval documentation for the components where they are approved separately.

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

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

DESCRIPTIVE ADVICE

Pattern: approved 11/4/88

- . An AND Mercury model FV-60 self-indicating weighing instrument of 60 kg maximum capacity.

Technical Schedule No 6/9C/215 describes the pattern.

Variant: provisionally approved 19/3/90 - approved 22/3/91

1. Model FV-150 of 150 kg maximum capacity.

Technical Schedule No 6/9C/215 Variation No 1 describes variant 1.

Variant: approved 22/3/91

2. Model FW-300KA4 of 300 kg maximum capacity.

Technical Schedule No 6/9C/215 Variation No 2 describes variant 2.

FILING ADVICE

Certificate of Approval No 6/9C/215 dated 7/5/90 is superseded by this Certificate and may be destroyed.

The Provisional status of Variant 1 has now been removed.

The documentation for this approval now comprises:

Certificate of Approval No 6/9C/215 dated 10/10/91
Technical Schedule No 6/9C/215 dated 22/7/88
Technical Schedule No 6/9C/215 Variation No 1 dated 7/5/90
Technical Schedule No 6/9C/215 Variation No 2 dated 10/10/91
Test Procedure No 6/9C/215 dated 22/7/88
Figures 1 to 3 dated 22/7/88



NATIONAL STANDARDS COMMISSION
TECHNICAL SCHEDULE No 6/9C/215

Pattern: AND Model FV-60 Weighing Instrument.

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

1. Description of Pattern

A self-indicating weighing instrument of 60 kg maximum capacity with a verification scale interval of 0.02 kg (Figure 1). The instrument may be operated by battery-power or using an external plug-in power supply.

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

1.1 Zero

Zero is automatically corrected to within $\pm 0.25e$ whenever the instrument comes to rest within $0.5e$ of zero. If the instrument comes to rest outside that range but within the zero reset range, zero is reset by use of the zero button.

1.2 Display Check

A display check is initiated whenever the instrument is switched on.

1.3 Tare

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

1.4 Set Point

The instrument may be fitted with a set point function, whereby HI and LO set points may be entered by means of the SET, HI/LO/S.SIZE and MODE (or UNIT) buttons.

1.5 Basework

The basework (Figure 2) has a Litra model LC4103-K060 load cell mounted directly between the main frame and the weighing platform frame. The maximum platform dimensions are 390 mm x 530 mm.

1.6 Markings

Instruments are marked with the following data, together in one location:

Manufacturer's name or mark	
Serial number	
NSC approval number	NSC No 6/9C/215
Accuracy class	(III)
Maximum capacity	Max ... kg *
Minimum capacity	Min ... kg *
Verification scale interval	e = d = ... kg *
Maximum subtractive tare	T = - ... kg

* Repeated adjacent to each reading face.

1.7 Levelling

The instrument is provided with adjustable feet and adjacent to the level indicator (Figure 3) is a notice advising that the instrument must be level when in use.

Figures 1 and 2 show an alternative level indicator location.

1.8 Verification Provision

Provision is made for a verification mark to be applied.



NATIONAL STANDARDS COMMISSION

TEST PROCEDURE No 6/9C/215

All load applications to the instrument should be in accordance with the Commission's recommended testing procedure for the elimination of rounding error as set out in Document 104.

The maximum permissible errors are:

- ± 0.5e for loads between 0 and 500e;
- ± 1.0e for loads between 501e and 2000e; and
- ± 1.5e for loads above 2000e.

1. Zero Test

As the automatic device resets zero when the weighing mechanism is in equilibrium within 0.5e of zero, zero should be checked as described in Document 104, with a load equal to, say, 10e on the load receptor. The indications with 0.25e and 0.75e additional mass on the load receptor will be 10e and 11e respectively.

2. Zero Range

The maximum range of operation of the zero setting device should not exceed 4% of the maximum capacity. The device shall be capable of both negative and positive adjustments of at least one-quarter of the zero adjustment range. With zero balance indicated apply a load of, say, 3.5% of maximum capacity and press the zero button; the instrument should not rezero.

3. Load Test

Test loads are to be applied increasing in not less than 5 approximately equal steps to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps to zero load.

4. Range of Indication

The maximum mass indicated should not exceed the marked maximum capacity by more than 10e; above this indicated mass the indication should be blank or show non-numerical characters.

Below zero the display may show a mass preceded by a minus sign.

5. Taring

The tare function should be able to reset the mass indicator to zero within 0.25e at any load within its capacity. This may be checked as described for Zero Test. A tare should not be able to be acquired above the marked tare capacity.

6. Non-approved Functions

Check, using the MODE (or UNIT) button, that the counting facility and the capability to display in "lb" are both disabled.



National Standards Commission

TECHNICAL SCHEDULE No 6/9C/215

VARIATION No 1

Pattern: AND Model FV-60 Weighing Instrument.

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

1. Description of Variant 1

An AND model FV-150 self-indicating weighing instrument of 150 kg maximum capacity and approved for use with up to 3000 verification scale intervals.

This model has all the features of the pattern (model FV-60) including set point and counting (refer also Notification of Change No 1 dated 13/4/90).



National Standards Commission

TECHNICAL SCHEDULE No 6/9C/215

VARIATION No 2

Pattern: AND Model FV-60 Weighing Instrument.

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

1. Description of Variant 2

An AND model FW-300KA4 self-indicating weighing instrument of 300 kg maximum capacity and approved for use with up to 3000 verification scale intervals.

This instrument uses an FW series indicator which has all the features of the indicator of the pattern (FV series - Figure 1) including set point and counting (refer also Notification of Change No 1 dated 13/4/90).

The model 300KA4 basework is similar to the basework of the pattern (Figure 2) but uses an AND model LC4204-K300 load cell of 300 kg capacity.

The load receptor has a nominal size of 600 mm x 700 mm.



National Standards Commission

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/9C/215

CHANGE No 1

The following changes are made to the approval documentation for the
AND Model FV-60 Weighing Instrument

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

1. In Certificate of Approval No 6/9C/215 dated 22/7/88, delete the Special Condition of Approval.
2. In Technical Schedule No 6/9C/215 dated 22/7/88, add the following:

1.9 Counting Function

The instrument may be fitted with a counting facility for determining the number of items, of nominally equal mass, from the mass of a quantity of the items. The unit mass of an item must be entered by weighing a sample of 5, 10, 20, 50 or 100 items.

3. In Test Procedure No 6/9C/215 dated 22/7/88, make the following changes:

- (i) Amend test 6. Non-approved functions to read;

"Check, using the MODE (or UNIT) button, that the capability to display in 'lb' is disabled."

- (ii) Add the following test;

"7. Counting Function

A test may be carried out for accuracy of count for a unit mass equal to or greater than the verification scale interval. The number counted shall be correct to one count. All tests shall be carried out using standard masses."

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

J. Birch
7 February 1990

National Standards Commission



NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/9C/215

CHANGE No 2

The following changes are made to the approval documentation for the

AND Model FV-60 Weighing Instrument

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

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.



In Technical Schedule No 6/9C/215 dated 22/7/88 clause 1. **Description of Pattern** and Technical Schedule No 6/9C/215 Variation No 2 clause 1. **Description of Variant 2**, add the following:

"The indicator may be replaced by another Commission-approved indicator, in which case the required markings shall include the Supplementary Approval Number for the replacement indicator."

National Standards Commission



NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/9C/215

CHANGE No 3

- The following change is made to the approval documentation for the

AND Model FV-60 Weighing Instrument

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

In Certificate of Approval No 6/9C/215 dated 10/10/91, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 1/11/94."

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.



FIGURE 6/9C/215 - 1

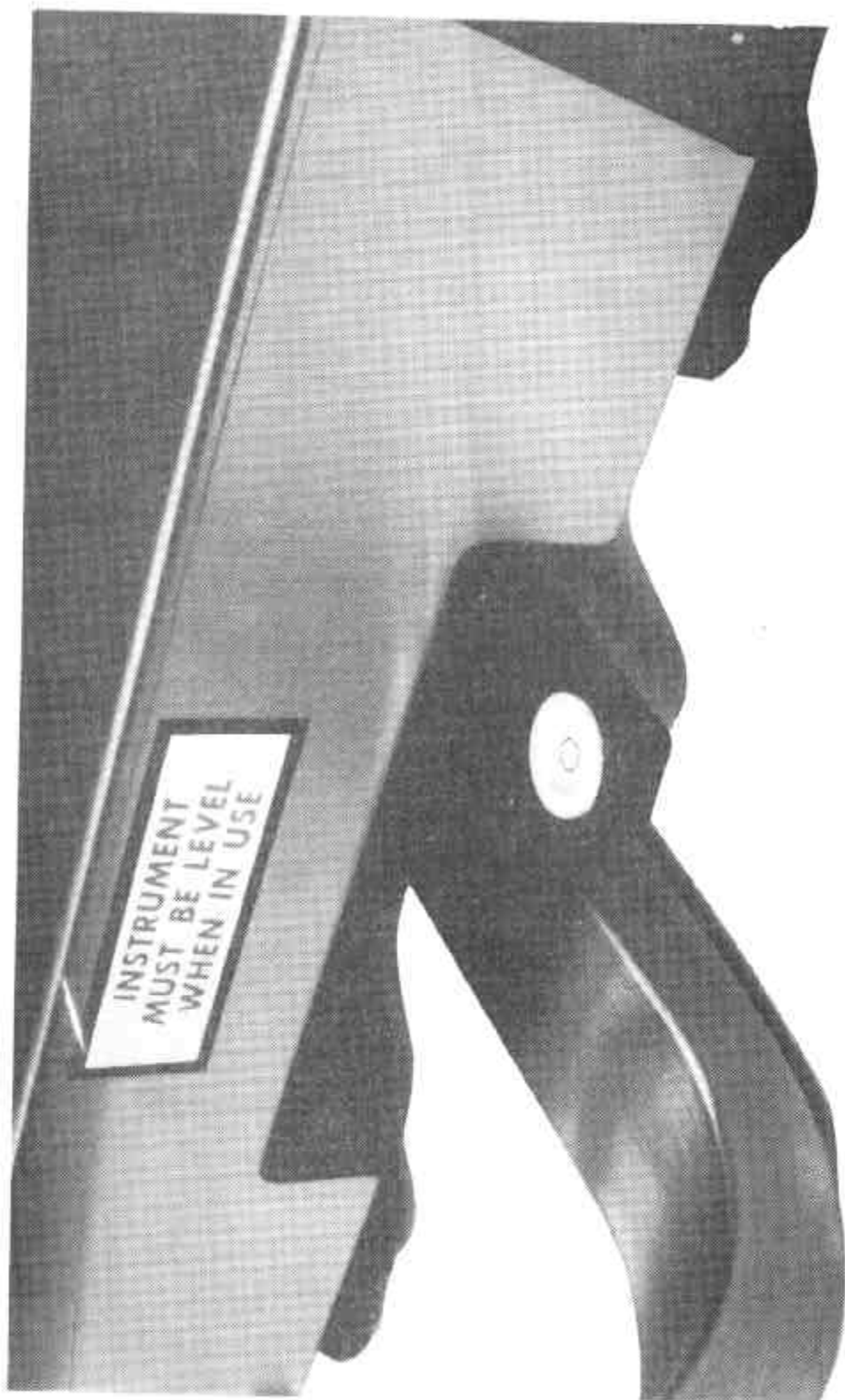


AND FV-60 Weighing Instrument

FIGURE 6/9C/215 - 2



With Load Receptor Removed



Showing Level Indicator