



NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S114

This is to certify that an approval has been granted by the Commission that the pattern and variants of the

Mercury Digital Indicator Model 579

submitted by Mercury Scale Company,
32 Dew Street,
Thebarton, South Australia, 5031,

are suitable for use for trade in any Commission-approved weighing instrument.

The approval of the pattern and variants is subject to review on or after 30/11/84.

All instruments purporting to comply with this approval shall be marked NSC No S114 in addition to the approval number of the unmodified pattern.

Relevant drawings and specifications are lodged with the Commission.

Conditions of Approval

1. The instrument when fitted with a Mercury Digital Indicator Model 579 shall have a maximum number of 3072 scale intervals.
2. The number of scale intervals applicable to the weighing instrument in which this indicator is used will be no greater than the number of scale intervals approved for the baseworks, or the load cell, or the headworks, whichever is the smallest.

Signed

Executive Director

Descriptive Advice

Pattern: approved 21/5/81

- . Mercury Digital Indicator Model 579 with a maximum of 3072 scale intervals.

Variants: approved 21/5/81

1. Without tare function.
2. Without automatic zero correction.
3. Without NETT/GROSS button.
4. Without BCD output.

Technical Schedule No S114 dated 15/6/81 describes the pattern and variants 1 to 4.
15/6/81



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S114

Pattern: Mercury Digital Indicator Model 579

Submitter: Mercury Scale Company,
32 Dew Street,
Thebarton, South Australia, 5031.

1. Description of Pattern

A digital mass indicator capable of displaying up to 3072 scale intervals (e) (Figure 1).

1.1 Zero

- (a) By adjusting the tool-operated zero the instrument can be zeroed within $\pm 0.25e$. The zero light marked CENTRE OF ZERO illuminates when zero is obtained within $\pm 0.25e$.
- (b) An automatic zero-correction device resets zero within $\pm 0.25e$, whenever the mass indicator indicates zero.

1.2 Tare

- (a) A semi-automatic subtractive taring device allows a mass on the load receptor of up to 3072e to be tared within $\pm 0.25e$.
- (b) When in gross mode the NET indicator illuminates when the TARE button is pressed.
- (c) When in net mode the NET indicator remains illuminated when the TARE button is pressed.

1.3 NET/GROSS button

When the NET/GROSS button is pressed:

- (i) The NET indicator illuminates and the indicator displays the net mass (gross mass minus the tare mass).
- or
- (ii) The GROSS indicator illuminates and the indicator displays the gross mass (total mass on the load receptor).

1.4 Check button

When the button marked CHECK is pressed the indicator displays blanks and then all 8's when the button is released.

1.5 Marking

Instruments which incorporate this headwork are to be marked on the indicator with the following data:

Manufacturer's name
 Accuracy class in the form:
 Serial number of instrument
 Maximum capacity in the form:
 Minimum capacity in the form:
 Verification scale interval in the form:
 Maximum subtractive tare in the form:
 NSC approval numbers in the form:

III

Max*
 Min*
 d_d = e =*
 T = -
 Headwork NSC No
 NSC No S114
 Basework NSC No

Load cell serial number(s)

1.6 Sealing

A lead and wire seal passes through a retaining screw and nut on the indicator (Figure 2).

2. Description of Variants

2.1 Variant 1

Without the tare facility.

2.2 Variant 2

Without automatic zero-correction.

2.3 Variant 3

Without the NET/GROSS button.

2.4 Variant 4

Without the BCD output (Figure 2).

TEST PROCEDURE No S114

1. Tests as per original certificate.

2. Taring

Tare a mass above maximum capacity. On removal of the mass no tare should have been entered, and the indicator should display all zeroes.

* These markings are repeated in the vicinity of each reading face.



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NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S114

CHANGE No 1

The following change is made to the description of the

Mercury Digital Indicator Model 579

given in Technical Schedule No S114 dated 15/6/81, in that the Test Procedure is replaced by that given on the attached sheet, which is a test procedure specific to this indicator.

Signed

Executive Director

19/2/82

TEST PROCEDURE S114

The following tests should be carried out in conjunction with the test procedures in the Technical Schedule of the instrument to which the Model 579 indicator is connected.

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;
- ± 1e for loads between 501e and 2000e; and
- ± 1.5e for loads above 2000e.

1. Zero Range

The maximum range of operation of the zero device should not exceed 4% of the capacity of the instrument (± 2% approximately). Satisfactory setting may be checked by the following method:

- (a) With zero balance indicated apply a load of, say, 2.5% of maximum capacity to the instrument and press the zero push button; the instrument should not re-zero.
- (b) Reduce the load to, say, 1.5% of maximum capacity and again press the zero push button; the instrument should indicate zero balance.

2. Zero Test

Check that, when ZERO is illuminated, zero is set within 0.25e of zero.

3. Range of Indication

- (a) The maximum mass indicated should not exceed the maximum capacity (Max) by more than 10 scale intervals; above this indicated mass the indicator should be blank.
- (b) Below zero the indication may be blank or the mass may be indicated, prefixed by a minus sign.

4. Taring

Attempt to tare a mass above maximum capacity. On removal of the mass no tare should have been entered, and the indicator should display all zeroes.

5. Test Loads

Test loads are to be applied to the complete weighing instrument increasing in not less than 5 approximately equal steps to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps.

6. Multiple Indicators

Where the existing headwork is retained and used in conjunction with the pattern, the variation between indications or printings for the same load shall not be greater than the absolute value of the maximum permissible error for that load on the device with the largest verification scale interval.

19/2/82



NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S114

CHANGE No 2

The following change is made to the description of the

Mercury Digital Indicator Model 579

in that the Test Procedure dated 19/2/82 is replaced by that on the attached sheet, dated 2/4/82, which includes reference to Variant 2 and a re-worded ZERO RANGE test.

Signed

Acting Executive Director

2/4/82

TEST PROCEDURE S114

The following tests should be carried out in conjunction with the test procedures in the Technical Schedule of the instrument to which the pattern is connected.

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;
- ± 1e for loads between 501e and 2000e; and
- ± 1.5e for loads above 2000e.

1. Zero Range

Check that the range of the zero adjustment is not more than 4% of the maximum capacity (± 2% approximately). Satisfactory setting may be checked by the following method:

- (a) With zero balance indicated, apply a load of, say 2.5% of maximum capacity to the instrument; it should not be possible to obtain zero by means of the zero adjustment;
- (b) reduce the load to say 1.5%; it should then be possible to obtain zero by means of the zero adjustment.

2. Zero Test

As the automatic zero tracking 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 then be 10e and 11e respectively.

For Variant 2 check that when the Center Of Zero lamp is on, zero is set within 0.25e.

3. Range of Indication

- (a) The maximum mass indicated should not exceed the maximum capacity (Max) by more than 10 scale intervals; above this indicated mass the indicator should be blank.
- (b) Below zero the indicator should blank, or show the mass prefixed by a minus sign.

4. Taring

Attempt to tare a mass above maximum capacity. On removal of the mass no tare should have been entered, and the indicator should display all zeroes.

5. Test Loads

Test loads are to be applied to the complete weighing instrument increasing in not less than 5 approximately equal steps to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps.

6. Multiple Indicators

Where the existing headwork is retained and used in conjunction with the pattern, the variation between indications or printings for the same load shall not be greater than the absolute value of the maximum permissible error for that load on the device with the largest verification scale interval.

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NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S114

CHANGE No 3

The following change is made to the description of the Mercury Model 579 Digital Indicator given in Technical Schedule No S114 dated 15/6/81.

To the Description of Pattern, add the following after the first sentence:

"The indicator is approved for connection with up to four 350 Ω load cells".

Signed

A handwritten signature in cursive script, appearing to read 'J. Petry'.

Executive Director

30/5/83



NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S114

CHANGE No 4

The following changes are made to the description of the Mercury Model 579 Digital Indicator.

1. In Supplementary Certificate of Approval No S114 dated 15/6/81,
 - (a) Delete, "Relevant drawings Commission."
 - (b) Insert, "The approval may be withdrawn if used other than as described in the drawings and specifications lodged with the Commission."

2. In Technical Schedule No S114 dated 15/6/81, from Description of Pattern, delete the following sentence:

"The indicator is approved for connection with up to four 350 Ω load cells".

Signed

Executive Director

30/9/83



25/3/88

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

VARIOUS CERTIFICATES OF APPROVAL

The following changes are made to the approval documentation for the approvals listed overleaf

submitted by Mercury Weighing and Control Systems Pty Ltd
32 Dew Street
Thebarton SA 5031.

In the Certificates and Technical Schedules listed, the following changes should be made:

- 1) The submittor should be changed to read;
A & D Mercury Pty Ltd
(the address remains unchanged)

- 2) Any Mercury instrument or component of an instrument approved in the documentation, may now also be known as "AND Mercury" or similar.

Signed

Executive Director

APPROVAL PATTERN**TYPE:** weighing instruments counter scales6/3/007 Model 92
6/3/008 Model 131**TYPE:** counter machines semi-self-indicating

6/4A/012 Model 304A

TYPE: counter machines freely-suspended < 30 kg (spring scales)

6/5/011 Model 211 DA

TYPE: weighing instruments non-self-indicating6/9A/001 Models 692 and 682
6/9A/004 Model 522D
6/9A/007 Model 211
6/9A/008 Model 600**TYPE:** weighing instruments self-indicating6/9C/005 Model 211D
6/9C/013 Up to 2500 lb or 1200 kg
6/9C/066 Model 522 AL
6/9C/067 Model SM100/479/522D
6/9C/081 Model SB-LP 1200
6/9C/088 Model 522D LT-10K**TYPE:** weighbridges self-indicating6/10B/040 Model WB-LT
6/10B/045A Model RVB-H20**TYPE:** automatic weighing instruments (except belt conveyors)

6/14B/012 Model HSD automatic hopper

TYPE: overhead weighing instrument (suspended load or receptor)6/18/005 With 211DA headwork
6/18/017 Model OHT 500**TYPE:** digital indicatorsS114 Model 579
S128 Model 1300
S132 Model 900
S161 Model AD4316
S199 Model AD-4321**TYPE:** load cellsS117 Interface model SM25-12 kg
S163 Transducers model B5112.1K
S221 HBM model TRT-50 (Mercury model TRT3K-50)

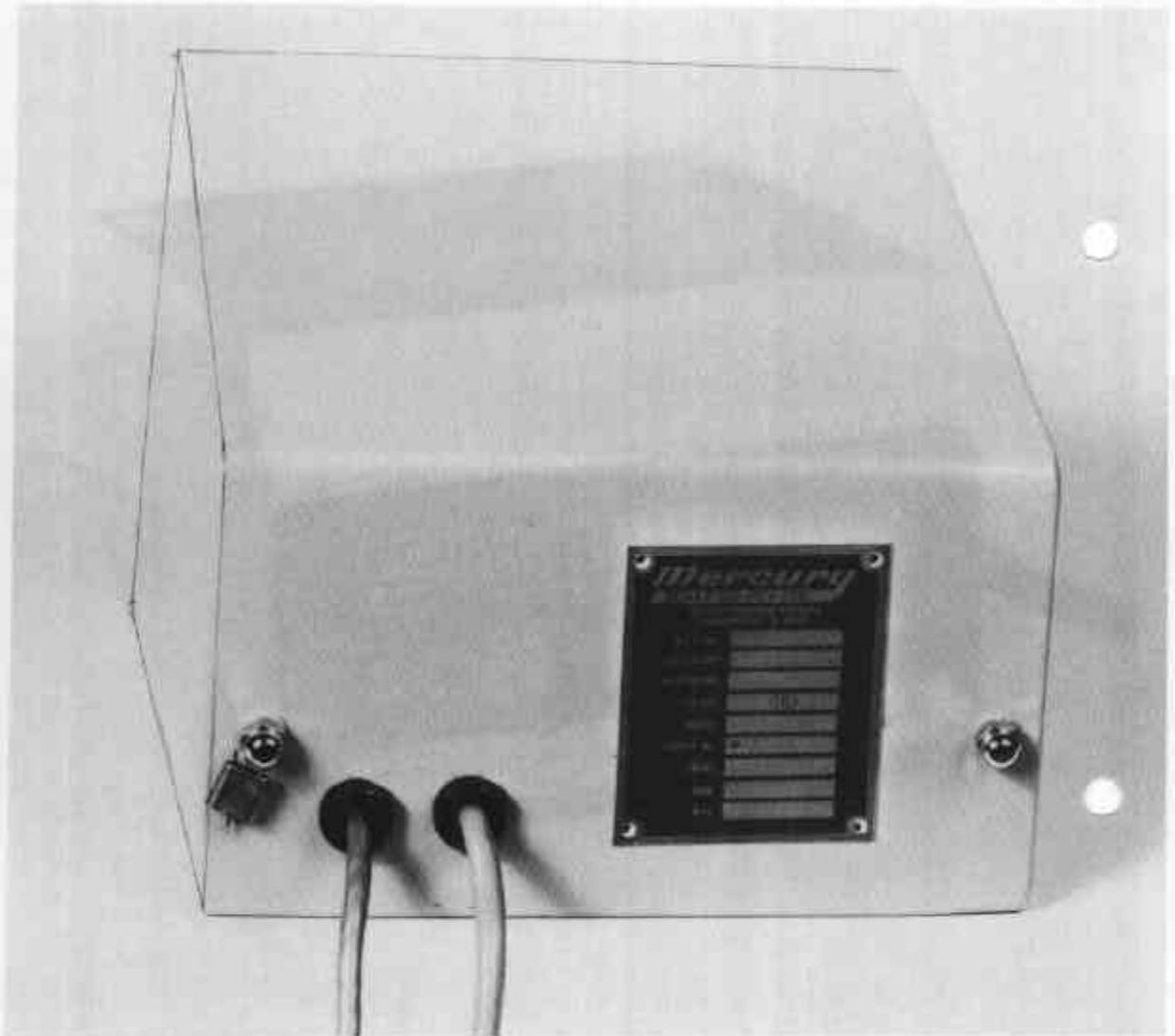
FIGURE S114 - 1



Mercury Digital Indicator Model 579

15/6/81

FIGURE S114 - 2



Mercury Model 579 without BCD Output, showing Sealing

15/4/81

10-11-81