



# NATIONAL STANDARDS COMMISSION

## WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

### REGULATION 9

#### CERTIFICATE OF APPROVAL No 6/14B/12

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

Mercury Model HSD Automatic Hopper Weighing Instrument

submitted by Mercury Weighing And Control Systems Pty Ltd  
32 Dew Street  
Thebarton, South Australia, 5031

are suitable for use for trade.

The approval is subject to review on or after 1/9/88.

Instruments purporting to comply with this approval shall be marked NSC No 6/14B/12.

Relevant drawings and specifications are lodged with the Commission.

#### Condition of Approval (Variant 1)

Only one method of mass indication (either the primary digital indicator or the dial indicator) may be in use at any one time; the other indicator shall be rendered inoperative.

Signed

  
Executive Director

#### Descriptive Advice

Pattern: approved 1/8/83

- Mercury model HSD automatic hopper weighing instrument of 15 000 kg maximum capacity and with up to 1500 scale intervals.

Variant: approved 1/8/83

- With a dial indicator added and displaying 750 scale intervals.

Technical Schedule No 6/14B/12 dated 23/8/83 describes the pattern and variant.

#### Filing Advice

The documentation for this approval comprises:

Certificate of Approval No 6/14B/12 dated 23/8/83  
Technical Schedule No 6/14B/12, dated 23/8/83  
Test Procedure No 6/14B/12 dated 23/8/83  
Figures 1 and 2 dated 23/8/83.

23/8/83



# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 6/14B/12

Pattern: Mercury Model HSD Automatic Hopper Weighing Instrument

Submitter: Mercury Weighing And Control Systems Pty Ltd  
32 Dew Street  
Thebarton, South Australia, 5031.

### 1. Description of Pattern

A self-indicating automatic hopper weighing system of 15 000 kg maximum capacity and up to 1500 verification scale intervals, using an HBM model Z3H3 500 kg load cell (NSC approval No S153) and a Mercury model 900 digital indicator (NSC approval No S132).

Figure 1 is a schematic diagram of the system, including the dial indicating mechanism approved in Variant 1.

A low pressure cut-out switch causes the computer to revert to manual operation if the air-supply pressure drops below 375 kPa.

#### 1.1 Markings

Instruments are marked with the following data:

Manufacturer's name or mark  
Model number  
Serial number  
NSC approval numbers

NSC No 6/14B/12  
Indicator NSC No S132  
Load Cell NSC No S153

Accuracy class  
Maximum capacity  
Minimum capacity  
Verification scale interval

III  
Max 15 000 kg\*  
Min 500 kg\*  
e = d = 10 kg\*

#### 1.2 Verification Provision

Provision is made for a verification mark to be applied.

### 2. Description of Variant 1

With a Mercury model 522 AL dial indicator (Figure 2) added to the instrument subject to the Condition of Approval stated in the Certificate.

The dial indicating mechanism is isolated from the lever mechanism by a pneumatic ram which locks the intermediate headwork lever in a fixed position whenever the primary (digital) indicator is in use. The ram is automatically operated by a solenoid valve which responds to a signal from the computer (refer Figure 1) whenever an "auto-batching" sequence is commenced.

#### 2.1 Markings

The instrument is marked as per the pattern, and in addition:

Minimum capacity (dial)  
Verification scale intervals (dial)

Min 1000 kg \*  
e = d = 20 kg\*

\*These markings are repeated in the vicinity of each reading face if not already there.

23/8/83

## TEST PROCEDURE No 6/14B/12

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:

- $\pm 0.5e$  for loads between 0 and 500e;
- $\pm 1.0e$  for loads between 501e and 1500e.

### 1. Zero Range

Check that the range of the zero adjustment is not more than 4% of the maximum capacity ( $\pm 2\%$  approximately). With zero balance indicated, apply a load of, say, 2.5% of maximum capacity to the instrument, and adjust the zero control; the instrument should not rezero.

### 2. Zero Test (Digital indicator only)

- (a) Check by means of Document 104, that when the zero light is lit, zero is set within 0.25e.
- (b) As the automatic zero tracking device resets zero when the weighing mechanism is in equilibrium within 0.5 scale interval of zero, zero should be checked, with a load equal to, say, 10 scale intervals 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.

### 3. Range of Indication

#### 3.1 Digital Indicator

- (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 blank or the mass will be indicated, prefixed by a minus sign.

#### 3.2 Dial Indicator

There shall be no scale marks below zero and above maximum capacity.

### 4. 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 to zero load.

### 5. Multiple Indicators

Where more than one indicator is used, 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.

Note: Condition of Approval stated in the Certificate.



## NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGEVARIOUS 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 submitter 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 scales

6/3/007            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-indicating

6/9A/001           Models 692 and 682

6/9A/004           Model 522D

6/9A/007           Model 211

6/9A/008           Model 600

**TYPE:** weighing instruments self-indicating

6/9C/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-indicating

6/10B/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 indicators

S114                Model 579

S128                Model 1300

S132                Model 900

S161                Model AD4316

S199                Model AD-4321

**TYPE:** load cells

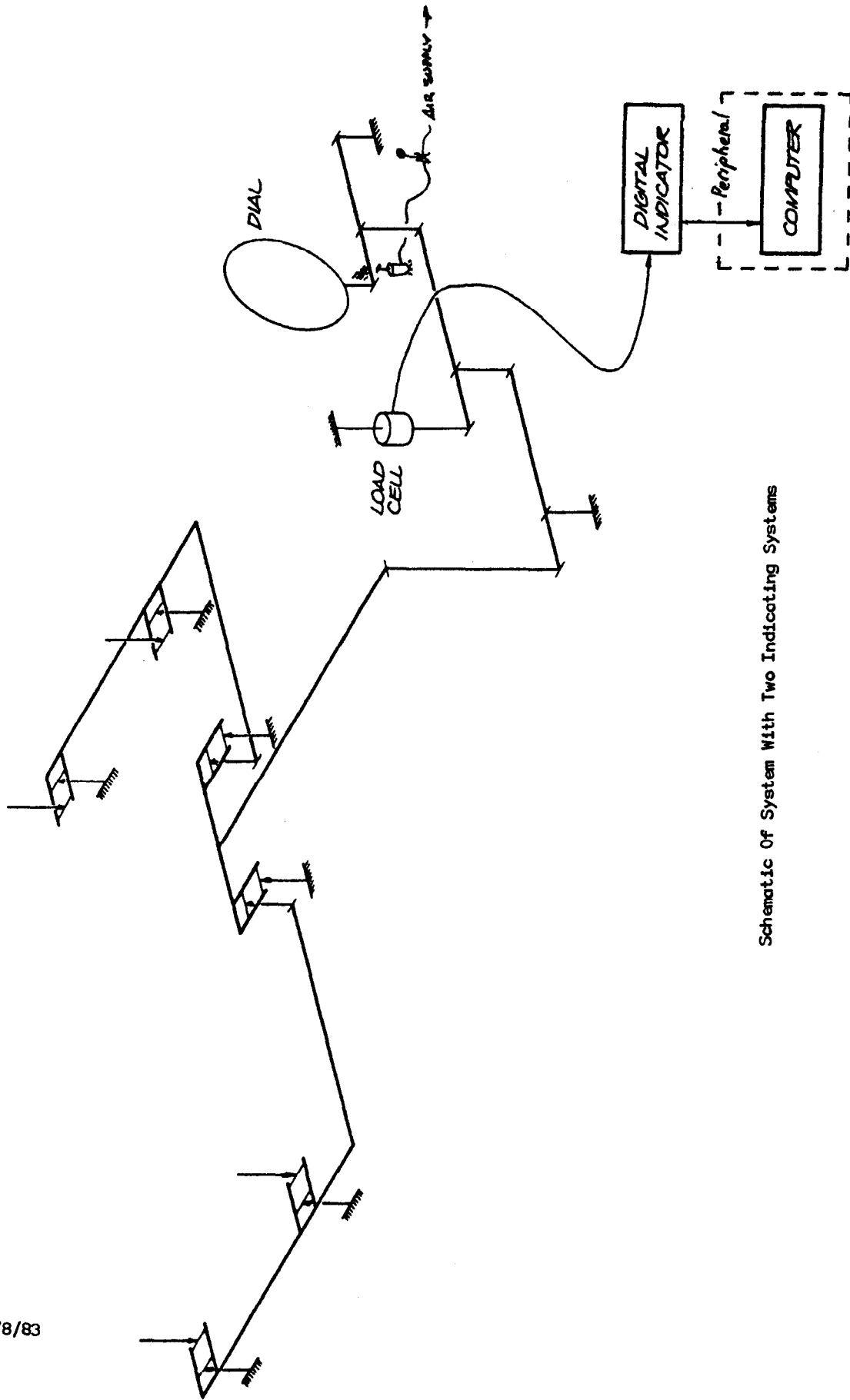
S117                Interface model SM25-12 kg

S163                Transducers model B5112.1K

S221                HBM model TRT-50 (Mercury model TRT3K-50)

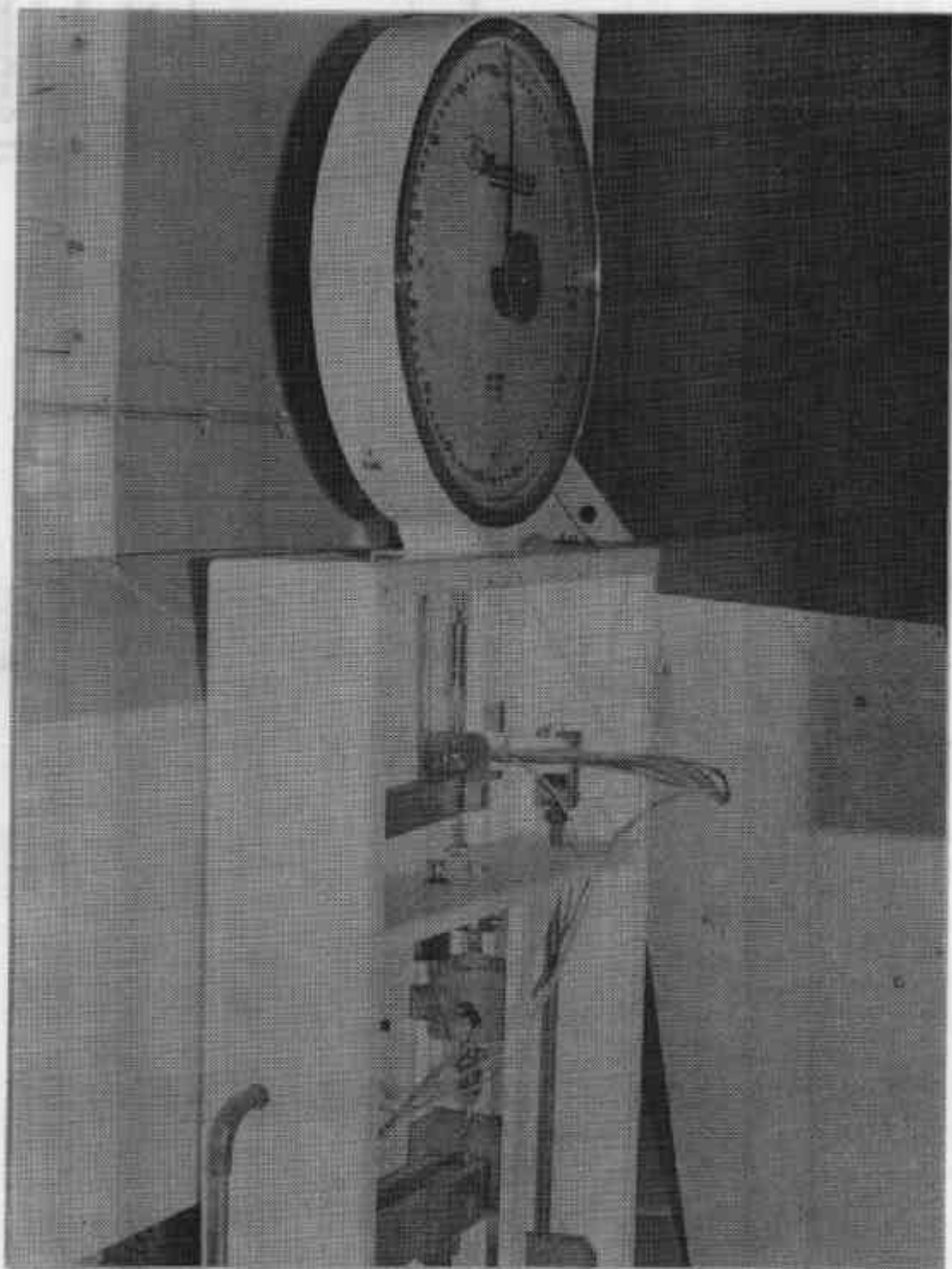
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FIGURE 6/14B/12 - 1



Schematic Of System With Two Indicating Systems

FIGURE 6/14B/12 - 2



Headworks Cabinet With Front Cover Removed

23/8/83