



NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/4D/218

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

Yamato Model R-208 Ecocell Weighing Instrument

submitted by Yamato Scale (Australia) Pty Ltd

on behalf of Yamato Scale Co Ltd
5/22 Chaemba-cho
Akashi 673
Japan.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/5/88.

This approval expires in respect of new instruments on 1/5/89.

Instruments purporting to comply with this approval shall be marked NSC No 6/4D/218.

This approval may be withdrawn if instruments are constructed other than as described in the drawings and specifications lodged with the Commission.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates Nos S1/0 and/or S2/0, as appropriate.

Signed

Executive Director

Descriptive Advice

Pattern: approved 13/4/82

A self-indicating price-computing weighing instrument of 3 kg capacity with a verification scale interval of 0.001 kg.

Variants: approved 13/4/82

1. With the purchaser's indicator mounted on a pillar.
2. With an output socket for the connection of auxiliary and/or peripheral equipment.

Technical Schedule No 6/4D/218 describes the pattern and variants 1 and 2.

Variants: approved 1/8/83

3. With a capacity of 6 kg with a verification scale interval of 0.002 kg.
4. With a capacity of 15 kg with a verification scale interval of 0.005 kg.

Technical Schedule No 6/4D/218 Variation No 1 describes variants 3 and 4.

Variant: approved 24/8/84

5. With the weighing unit, indicator and keyboard all in separate housings.

Technical Schedule No 6/4D/218 Variation No 2 describes variant 5.

Variant: approved 25/3/85

6. With 12 volt battery backup, or battery operation.

Technical Schedule No 6/4D/218 Variation No 3 describes variant 6.

Variant: approved 9/8/85

7. Without price-computing and with semi-automatic subtractive tare and non-automatic (digital) tare.

Technical Schedule No 6/4D/218 Variation No 4 describes variant 7.

Variants: approved 5/12/86

8. Connected to a Hugin model 6200 cash register.
9. Without tare.

Technical Schedule No 6/4D/218 Variation No 5 describes variants 8 and 9.

Filing Advice

Certificate of Approval No 6/4D/218 dated 20/12/85 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 6/4D/218 dated 8/1/87
Technical Schedule No 6/4D/218 dated 2/5/83
Technical Schedule No 6/4D/218 Variation No 1 dated 23/8/83
Technical Schedule No 6/4D/218 Variation No 2 dated 19/2/85
Technical Schedule No 6/4D/218 Variation No 3 dated 21/5/85
Technical Schedule No 6/4D/218 Variation No 4 dated 20/12/85
Technical Schedule No 6/4D/218 Variation No 5 dated 8/1/87
Test Procedure No 6/4D/218 dated 2/5/83 (including Table 1)
Figures 1 and 2 dated 2/5/83
Figures 3 and 4 dated 19/2/85.



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/218

Pattern: Yamato Model R-208 Ecocell Price-computing Weighing Instrument

Submitter: Yamato Weighing Systems Pty Ltd
16 Gertrude Street
ARNCLIFFE, NEW SOUTH WALES, 2205

1. Description of Pattern

The pattern is a self-indicating price-computing weighing instrument (Figure 1).

Maximum capacity	3 kg
Scale interval	0.001 kg
Unit price	\$999.99/kg in 1c increments
Price	\$2999.97 in 1c increments
Tare	-3 kg

1.1 Zero

Zero is automatically corrected to within 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 may be reset by pressing the ZERO button. The ZERO light illuminates whenever zero is correct within 0.25e.

1.2 Display Check

When power is applied to the instrument, the displays will alternately show all 8's and blank several times, and then stay blank. Zero is then set by pressing the ZERO button.

1.3 Tare

Operation of the TARE button allows semi-automatic taring of a mass on the load receptor to within 0.25e. The tare is subtractive and of capacity equal to the capacity of the instrument.

1.4 Marking

The instrument is marked with the following data, together in one location:

Manufacturer's name or mark	
Serial number	
NSC approval number	NSC No 6/4D/218
Accuracy class	III
Maximum capacity	Max = ... kg*
Minimum capacity	Min = ... kg*
Verification scale interval	e = d = ... kg*
Maximum subtractive tare	T = -... kg

1.5 Levelling

The instrument is provided with a level indicator and adjustable feet. Adjacent to the level indicator is a notice advising that the instrument must be level when in use.

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

2. Description of Variants

2.1 Variant 1

With the purchaser's indicator mounted on a pillar (Figure 2).

2.2 Variant 2

With an output socket for the connection of auxiliary or peripheral equipment.

TEST PROCEDURE No 6/4D/218

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 inclusive;
- +1.0e for loads between 501 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 of the load receptor. The indications with 0.25e and 0.75e additional mass on the load receptor will then 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 ($\pm 2\%$ approximately). Satisfactory setting may be checked by the following method:

With zero balance indicated apply a load of, say, 2.5% of maximum capacity to the instrument and press the ZERO button; the instrument should not rezero.

3. Level Sensitivity

As the automatic zero device may prevent the zero from changing when the instrument is tilted at zero load, the effect of tilt should be initially checked with a small load on the instrument, say, 10e.

When the instrument is tilted so that the bubble in the level indicator moves 2 mm, the indication of 10e should not change by more than 2e, and when, in the tilted position, the 10e load is removed and zero is allowed to automatically reset, or it is manually reset, the instrument should satisfy the accuracy requirements given above.

4. Load Test

Test loads are to be applied to the 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. Price-computing Accuracy

The indications of mass, unit price and price listed in Table 1 will indicate that the price-computing and mass circuits are functioning correctly. The figures should be indicated exactly as in the table as rounding is effected within the computer.

Note: This test does not establish correct mass indication; a separate test in accordance with Document 104, is necessary. This may be carried out in conjunction with the previous test.

6. Range of Indication

- (a) The maximum mass indicated should not exceed the marked maximum capacity (Max) by more than 10e; above this indicated mass the indication should be blank.
- (b) The minimum mass indicated should be zero; below this the indication should be blank.

7. 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.

TABLE 1

<u>Indicated Mass</u>	<u>Unit Price</u>	<u>Price</u>
kg	\$/kg	\$
0.010	99.99	01.00
0.019	9.99	00.19
0.900	99.14	89.23
2.500	99.90	249.75
3.000	999.99	2999.97

Price-computing Table - 3 kg Instrument With 0.001 kg Scale Intervals



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/218

VARIATION No 1

Pattern: Yamato Model R-208 Ecocell Price-computing Weighing Instrument

Submitter: Yamato Weighing Systems Pty Ltd
16 Gertrude Street
ARNCLIFFE, NEW SOUTH WALES, 2205

1. Description of Variants

1.1 Variant 3

With a capacity of 6 kg by 0.002 kg scale intervals and with unit price to \$999.99/kg and price to \$5999.94.

1.2 Variant 4

With a capacity of 15 kg by 0.005 kg scale intervals and with unit price to \$999.99/kg and price to \$9999.99.

1.3 Tare

A subtractive taring device may be fitted.

2. Load Cell Mounting Bolts

There shall be some means provided to prevent unauthorised access to the load cell mounting bolts.

Test Procedure

In addition to the tests set out in Table 1 of Test Procedure No 6/4D/218 dated 2/5/83 the following should be carried out where applicable.

<u>Indicated Mass</u>	<u>Unit Price</u>	<u>Price</u>
kg	\$/kg	\$
6.000	999.99	5999.94
15.000	666.66	9999.90

23/8/83



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VARIATION No 2

Pattern: Yamato Model R-208 Ecocell Weighing Instrument

Submittor: Yamato Scale (Australia) Pty Ltd

on behalf of: Yamato Scale Co Ltd
5/22 Chaemba-cho
Akashi 673
Japan.

1. Description of Variant 5

The model R-208 with the weighing unit, indicator and keyboard all in separate housings (Figures 3 and 4).

The level indicator is visible through a window in the top of the load receptor. A notice advising that the instrument must be level when in use is located on the basework adjacent to the level indicator and is repeated on the indicator.

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21/5/85



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TECHNICAL SCHEDULE No 6/4D/218

VARIATION No 3

Pattern: Yamato Model R-208 Ecocell Weighing Instrument

Submitter: Yamato Scale (Australia) Pty Ltd

on behalf of: Yamato Scale Co Ltd
5/22 Chaemba-cho
Akashi 673
Japan

1. Description of Variant 6

With 12 volt battery backup, or battery operation.



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/218

VARIATION No 4

Pattern: Yamato Model R-208 Ecocell Weighing Instrument

Submitter: Yamato Scale (Australia) Pty Ltd

on behalf of: Yamato Scale Co Ltd
5/22 Chaemba-cho
Akashi 673
Japan

1. Description of Variant 7

Without price-computing and with semi-automatic subtractive tare and digital tare of capacity up to the capacity of the instrument. The selection of one type of tare will automatically cancel any previously entered tare, or the operation of one will be inhibited once the other has been selected.

The digital tare is operated by means of a touch-pad keyboard on the instrument facia.

The instrument is not for retail counter use and must be so marked.



NATIONAL STANDARDS COMMISSION

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VARIATION No 5

Pattern: Yamato Model R208 Ecocell Weighing Instrument

Submitter: Yamato Scale (Australia) Pty Ltd

on behalf of: Yamato Scale Co Ltd
5/22 Chaemba-Cho
Akashi 673
Japan.

1. Description of Variants

1.1 Variant 8

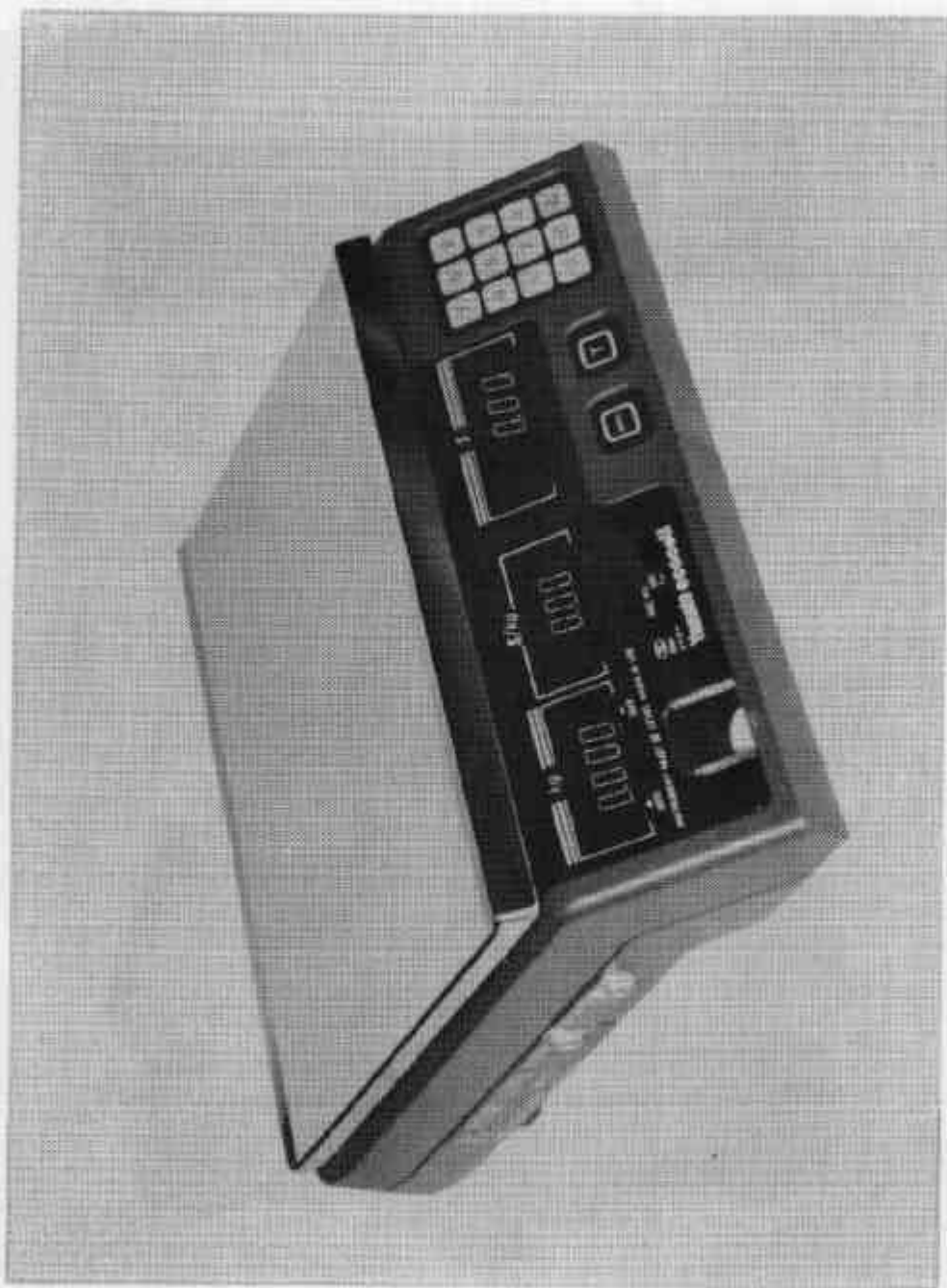
Connected to a Hugin model 6200 cash register in which case the keyboard of the cash register is used to enter the unit price which is then transferred to the weighing instrument by pressing the SCALE key, or alternatively, the unit price associated with a PLU in the cash register may be transferred to the weighing instrument by entering the appropriate PLU number followed by the PLU key.

The total price is automatically returned to the cash register.

1.2 Variant 9

The instrument without any tare functions.

FIGURE 6/40/218 - 1



Yamato Model R-208 EcoCell

2/5/83

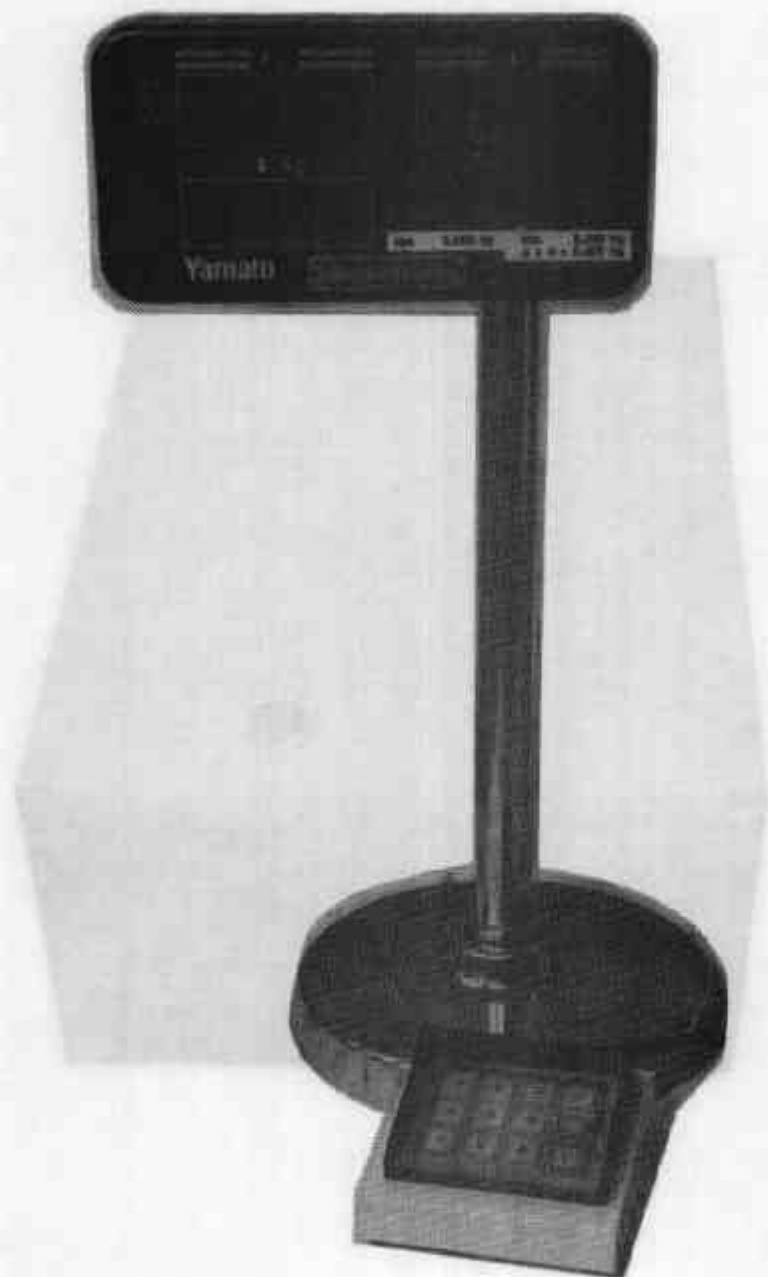
FIGURE 6/40/218 - 2



Purchaser's Indicator On A Pillar

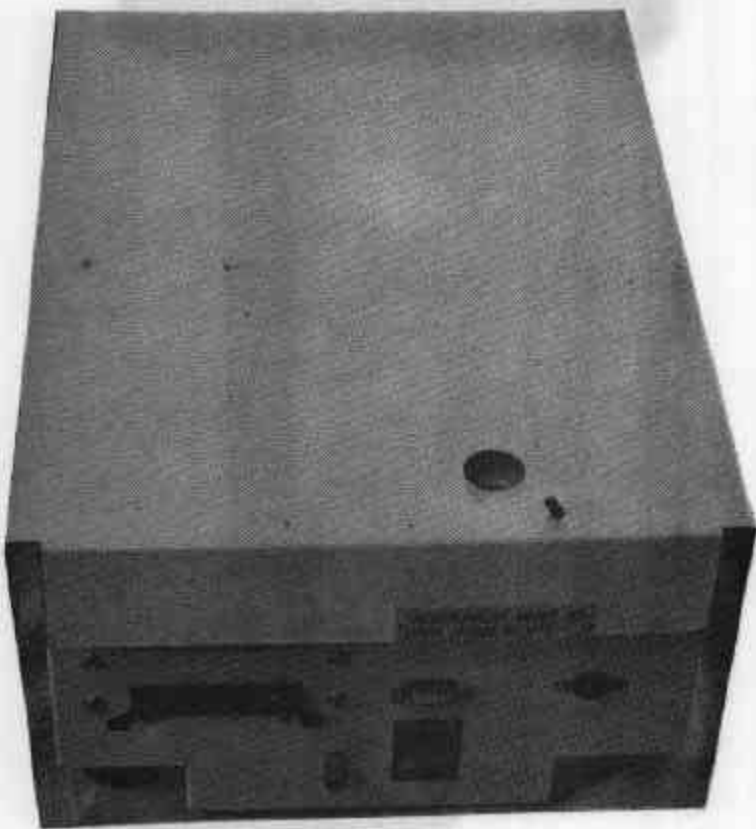
2/5/83

FIGURE 6/4D/218 - 3



Indicator and Separate Keyboard

FIGURE 6/40/218 - 4



Weighting Unit