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WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/9C/73

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

Yamato Model DP 2000 Weighing Instrument

submitted by Yamato Weighing Systems Pty Ltd 16 Gertrude Street Arncliffe, New South Wales, 2205

are suitable for use for trade.

The approval is subject to review on or after 31/3/86.

Instruments purporting to comply with this approval shall be marked NSC No 6/9C/73.

Relevant drawings and specifications are lodged with the Commission.

Condition of Approval

The load cells to be used in these instruments shall be subject to regular certification by the National Standards Commission.

> Signed Executive Director

Descriptive Advice

Pattern: approved 8/4/81

Platform weighing instrument of capacity 150 kg by 0.05 kg scale intervals, with a Yamato UMI-K15-U 15 kg load cell and with tare to 99.95 kg.

approved 8/4/81 Variant:

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1. With the mass indicator in a separate housing.

Technical Schedule No 6/9C/73 dated 11/5/81 describes the pattern and variant 1.

Variants: approved 18/8/81

2. Of capacity 60 kg or 30 kg, with a Yamato UMI-K8-U 8 kg load cell.

з. With tare to maximum capacity.

4. Without the digital keyboard.

Technical Schedule No 6/9C/73 Variation No 1 dated 24/8/81 describes variants 2 to 4.

23/8/83

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Certificate of Approval No 6/9C/73

Variants: approved 1/8/83

5. With the basework in an alternative (stainless steel) housing.

6. With a capacity of 1 t or 600 kg, using a Yamato UMI-K50-U-A001 50 kg load cell.

Technical Schedule No 6/9C/73 Variation No 2 dated 23/8/83 describes variants 5 and 6.

Filing Advice

Certificate of Approval No 6/9C/73 dated 24/8/81 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Certificate of Approval No 6/9C/73 dated 23/8/83 Technical Schedule No 6/9C/73 dated 11/5/81 Technical Schedule No 6/9C/73 Variation No 1 dated 24/8/81 Technical Schedule No 6/9C/73 Variation No 2 dated 23/8/83 Test Procedure No 6/9C/73 dated 11/5/81 Figures 1 to 4 dated 11/5/81 Figure 5 dated 23/8/83.



TECHNICAL SCHEDULE No 6/9C/73

Pattern: Yamato Weighing Instrument Model DP 2000

Submittor: Healy-Parker Australia Pty Ltd, 16 Gertrude Street, Arncliffe, New South Wales, 2205.

1. Description of Pattern

The pattern is a platform weighing instrument of capacity 150.10 kg by 0.05 kg with a mechanical basework. The instrument has two second order levers connected to a pull-rod to which is connected a Yamato UM1_K15_U 15 kg load cell (Figures 1, 2 and 3). The output from the load cell is fed to the digital indicator which forms part of the complete instrument (Figure 4). The instrument is approved for up to 3002 scale intervals.

The basework is fitted with four adjustable legs and a level indicator adjacent to which is a notice advising that the instrument must be level when in use.

The indicator has the following features:

1.1 Zero

A push-button zero operates an automatic zero-correction device which resets zero within ± 0.25e whenever the instrument comes to rest within 0.5e of zero. The light marked CENTRE ZERO then illuminates.

1.2 Tare

A semi-automatic push-button tare marked T tares a mass on the load receptor to within ± 0.25e. On removal of the mass, the value of the tare prefixed by a minus sign is displayed. Tare is subtractive and has a capacity of 99.95 kg. A tare indicator light marked TARE illuminates.

1.3 Digital Tare

A non-automatic subtractive taring device can be used to enter a tare in 1e increments up to 99.95 kg using a 0 to 9 keyboard. The tare indication light illuminates.

1.4 Clear

A push-button marked "C" clears the entered tare.

1.5 Incorrect Tare Light

A light indicates when an incorrect use of tare has been attempted.

1.6 Markings

The instrument is marked with the following data:

11/5/81 (replaced 11/8/81)

..../2

Manufacturer's nameSerial number of instrumentNSC approval number in the form:NSC approval number in the form:Accuracy class in the form:Maximum capacity in the form:Minimum capacity in the form:Verification scale interval in the form:Maximum subtractive tare in the form:T = -*

In addition there are two notices stating that the instrument

(i) must be level when in use, (placed adjacent to the level indicator),

and

(ii) is not for retail counter use (placed in the vicinity of the reading face).

2. Sealing

- (i) The indicator is sealed either by a sealing wire and lead seal, the sealing wire being threaded through holes in two retaining screws in the indicator cover, or alternatively, without sealing wire, with sealing plugs on either side of the indicator, one of which acts as the stamping plug described in (ii).
- (ii) A stamping plug is fitted to the side of the indicator casing.
- (iii) The serial number of the load cell is sealed to the indicator housing.

3. Description of Variants

3.1 Variant 1

With the mass indicator in a separate housing, in which case the serial numbers of both the load cell and the baseworks are sealed to the indicator housing.

* These markings are repeated in the vicinity of each mass indicator.

1. Accuracy Requirements

The maximum permissible errors are:

- ± 0.5e for loads between 0 and 500e inclusive;
- ± 1e for loads between 501e and 2000e inclusive; and
- ± 1.5e for loads above 2000e.

2. Load Tests

Test loads are to be applied to the instrument up to maximum capacity with the first load equal to the minimum capacity, then in not less than 5 steps to maximum capacity, followed by decreasing loads of not less than 5 steps to zero load.

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 instrument should display these loads within the applicable tolerance as listed above.

3. Zero Balance

Check by means of the Commission's digital zero test (Design Manual No 1, Document 104, Testing Procedure for the Elimination of Rounding Error for Weighing Instrument with Digital Indicator) that, when the "zero" light is illuminated, zero is set within \pm 0.25 of zero.

4. Zero Range

The maximum range of operation of the zero device should not exceed 4% of the capacity of the instrument (\pm 2% approximately).

5. Load Cell Creep

Leaving a maximum capacity load on the load receptor for a period of 30 minutes should not cause the mass indicated to be incorrect, and on removal of the load the mass indicated should be zero \pm 0.25e.

6. Range of Indication

- (a) The maximum mass indicated should not exceed the maximum capacity (Max); above this indicated mass the indicator should blank.
- (b) The minimum mass indicated should be zero; below this indicated mass the indicator should blank, or should display the tare entered prefixed by a "minus" sign.

7. Digital Tare

- (i) Enter a digital tare equivalent to 100.4e; the indication should be rounded to 100e, or the INCORRECT TARE light should illuminate.
- (ii) Enter a digital tare equivalent to 100,6e; the indicator should be rounded to 101e, or the INCORRECT TARE light should illuminate.

11/5/81



TECHNICAL SCHEDULE No 6/9C/73

VARIATION No 1

Pattern: Yamato Weighing Instrument Model DP2000

Submittor: Healy-Parker Australia Pty Ltd, 16 Gertrude Street, Arncliffe, New South Wales, 2205.

1. Description of Variants

1.1 Variant 2

In capacities of 60 kg by 0.02 kg scale intervals and 30 kg by 0.01 kg scale intervals, using a Yamato UMI-K8-U 8 kg load cell with up to 3000 scale intervals. Tare is subtractive and has a maximum capacity of 60 kg and 30 kg respectively.

1.2 Variant 3

With tare to maximum capacity of the instrument, - that is, the semi-automatic push-button tare may allow a mass to be tared up to the maximum capacity. With digital tare, although a tare greater than maximum capacity may be entered via the 0-9 keypad, the instrument will still blank when a gross mass greater than the maximum capacity plus 10e is deposited on the load receptor.

1.3 Variant 4

Without the digital keyboard, in which case the instrument is restricted to semi-automatic push-button tare to maximum capacity. An additional push-button labelled TARE is located adjacent to the ZERO push-button on the faceplate, replacing the push-button labelled T on the keyboard.

TEST PROCEDURE No 6/9C/73

VARIATION No 1

Variant 2 is tested as described in Test Procedure No 6/9C/73 dated 11/5/81, with the following exception:

6. Range of Indication

(a) The mass indication should blank not more than 10 scale intervals above the marked maximum capacity.

(b) As in original Test Procedure.



TECHNICAL SCHEDULE No 6/9C/73

VARIATION No 2

Pattern: Yamato Model DP 2000 Weighing Instrument

Submittor: Yamato Weighing Systems 16 Gertrude Street Arncliffe, New South Wales, 2205.

1. Description of Variants

1.1 Variant 5

With the basework in an alternative (stainless steel) housing. Figure 5 shows such a basework fitted with a Yamato model EDI-500W indicator which is approved in NSC approval No S129.

1.2 Variant 6

In capacities of 1 t and 600 kg, using a Yamato model UMI_K50_U_A001 50 kg load cell, and approved for use with up to 2000 scale intervals.

1.2.1 Load Cell Marking

The following is the minimum data required to be marked on the load cell:

Manufacturer's name or mark Model number Serial number Maximum capacity Output rating (nominal)

mV/V

1.2.2 Load Cell Specifications

UMI-K50-U-A001 Type: Yamato 50 kg Maximum capacity 2000 Maximum number of verification scale intervals 3 kg Minimum dead load Minimum value of verification scale interval 0.1 kg 0.3 m Cable length (- 0.01 m) **408** Ω Input impedance (nominal) 10-15 V DC or AC Supply voltage Number of leads 1.8 mV/V Output rating (nominal)



NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/9C/73

CHANGE No 1

The following change is made to the description of the

Yamato Weighing Instrument Model DP 2000

given in Technical Schedule No 6/9C/73 dated 11/5/81:

Pages 1 and 2 of the Technical Schedule are replaced with the attached pages 1 and 2 in which the words "up to" are inserted before "3002 scale intervals" in last line 1st portion of paragraph 1, and paragraph 2 is rewritten.

Signed Executive Director



Yomoto DP 2000 Weighing Instrument



11/5/81

FIGURE 6/9C/73 - 2

FIGURE 6/9C/73 - 3



DP 2000 Schematic showing Load Cell Mounting

11/5/81



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FIGURE 6/9C/73 - 4

11/5/81

FIGURE 6/9C/73 - 5



Bosework In Alternative Housing