Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/9C/267

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

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

Ishida Model IWQ-150 Weighing Instrument

submitted by Heat and Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval becomes subject to review on **1/12/18**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	27/11/00
1	Pattern approved – certificate issued	13/02/01
2	Variant 1 approved – interim certificate issued	26/02/01
3	Variant 1 approved – pattern amended (alternate model number) – certificate issued	30/03/01
4	Variants 2 & 3 approved – interim certificate issued	13/09/01
5	Variants 2 & 3 approved – pattern amended (sealing & indicator notice) – certificate issued	17/10/01
6	Variant 4 approved – interim certificate issued	4/04/02
7	Variant 4 approved – certificate issued	13/05/02
8	Variant 5 approved – certificate issued	6/11/02

Rev	Reason/Details	Date
9	Pattern & variants 1 to 5 reviewed – notification of change issued	4/08/06
10	Pattern & variants 1 to 5 reviewed & updated – certificate issued	30/07/13

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) 6/9C/267' and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) 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 document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

This approval shall NOT be used in conjunction with General Certificate No 6B/0.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.

C Davies

Mr C Davies

TECHNICAL SCHEDULE No 6/9C/267

1. Description of Pattern approved on 27/11/00

An Ishida model IWQ-150 class (III) non-automatic self-indicating multi-interval weighing instrument (Figure 1) with a verification scale interval (e_1) of 0.02 kg up to 60 kg and a verification scale interval (e_2) of 0.05 kg from 60 kg up to the maximum capacity of 150 kg.

1.1 Basework

The model IWQ-150 basework has the load receptor directly supported by a single load cell. The load receptor has maximum nominal dimensions of 380 × 530 mm.

1.2 Load Cell

An Ishida model AT-200 200 kg capacity load cell is used.

1.3 Indicator

An Ishida model IWQ-150 digital indicator is used. Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices. The indicator may also be known as a model IWQ-D.

1.3.1 Zero

Zero is automatically corrected to within ±0.25e_1 whenever power is applied and whenever the instrument comes to rest within 0.5e_1 of zero.

The initial zero-setting device of the pattern has a nominal range of not more than 20% of the maximum capacity of the instrument.

The instrument has a semi-automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument.

1.3.2 Tare

A semi-automatic and/or non-automatic keyboard-entered pre-set subtractive tare device, each of up to 59.98 kg maximum capacity may be fitted.

1.3.3 Display Check

A display check is initiated whenever power is applied.

1.3.4 Management Functions

Instruments may be fitted with a number of management functions which are not approved for trade use, including counting function and UNDER/ACCEPT/OVER facility.

1.4 Levelling

Instruments are provided with adjustable feet and adjacent to the level indicator is a notice stating ‘instrument must be level when in use’, or similar wording.

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

Provision is made for the calibration adjustments to be sealed by means of the two sealing screws provided on the rear of the indicator.

Alternatively, the calibration adjustments may be sealed by means of a destructible adhesive label over the retaining screw - Figure 2 shows a model IWB-D indicator but the sealing method is typical; it is important to ensure that this screw is in place and tightened prior to the label being applied.

1.7 Descriptive Markings and Notices

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's mark, or name written in full	Ishida Co. Ltd, Japan
Name or mark of manufacturer's agent	……..
Indication of accuracy class	(III)
Pattern approval number for the instrument	NMI (or NSC) 6/9C/267
Maximum capacity	*Max* ...../..... kg #1
Minimum capacity	*Min* ..... kg #1
Verification scale interval	*e* = .../..... kg #1
Maximum subtractive tare	*T* = - ……. kg #2
Serial number of the instrument	……..

#1 These markings are also shown near the display of the result if they are not already located there.

#2 This marking is required if *T* is not equal to *Max*.

Note: When the pre-set tare device is fitted (variant 1), instruments are marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording).

2. Description of Variant 1 **approved on 30/03/01**

An Ishida model IWQ-30 self-indicating multi-interval weighing instrument with a verification scale interval (e_1) of 0.005 kg up to 15 kg and with a verification scale interval (e_2) of 0.01 kg from 15 kg up to the maximum capacity of 30 kg.

2.1 Basework

The model IWQ-30 basework has the load receptor directly supported by a single load cell. The load receptor has maximum nominal dimensions of 345 × 345 mm.

2.2 Load Cell

An Ishida model AT-50 50 kg capacity load cell is used.

2.3 Indicator

An Ishida model IWQ-D digital indicator is used.

A semi-automatic and/or non-automatic keyboard-entered pre-set subtractive tare device, each of up to 14.995 kg maximum capacity may be fitted. When the pre-set tare device is fitted, instruments are marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording).

3. Description of Variant 2 approved 17/10/01

Ishida IWX series instruments (Figure 3) in certain capacities as listed below. These instruments are similar to the pattern (model IWQ-150) including having a vacuum flourescent display but have a reduced set of keypad keys.

An Ishida model IWX-D digital indicator is used. Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

The tare functions described below are available through keypad combinations. The UNDER/OVER/ACCEPT management facility described for the pattern is also available but the counting function is not.

- Model IWX-30 self-indicating multi-interval weighing instrument with a verification scale interval (e_1) of 0.005 kg up to 15 kg and with a verification scale interval (e_2) of 0.01 kg from 15 kg up to the maximum capacity of 30 kg.

  A semi-automatic and/or non-automatic keyboard-entered pre-set subtractive tare device, each of up to 14.995 kg maximum capacity may be fitted.

  When the pre-set tare device is fitted, instruments are marked ‘NOT FOR TRADING DIRECT WITH THE PUBLIC’ (or similar wording).

- Model IWX-150 self-indicating multi-interval weighing instrument with a verification scale interval (e_1) of 0.02 kg up to 60 kg and with a verification scale interval (e_2) of 0.05 kg from 60 kg up to the maximum capacity of 150 kg.

  A semi-automatic and/or non-automatic keyboard-entered pre-set subtractive tare device, each of up to 59.98 kg maximum capacity may be fitted.

4. Description of Variant 3 approved 17/10/01

Ishida IWB series instruments (Figure 4) in certain capacities as listed below. These instruments are similar to variant 2 (IWX series) but are powered by battery or by an Ishida model IWB DC mains adaptor and have a liquid crystal display (rather than the vacuum flourescent display used for the pattern and variants 1 & 2).

An Ishida model IWB-D digital indicator is used. Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

The tare functions described below are available through keypad combinations. The UNDER/OVER/ACCEPT management facility described for the pattern is also available but the counting function is not.

- Model IWB-30 self-indicating multi-interval weighing instrument with a verification scale interval (e_1) of 0.005 kg up to 15 kg and with a verification scale interval (e_2) of 0.01 kg from 15 kg up to the maximum capacity of 30 kg.

A semi-automatic and/or non-automatic keyboard-entered pre-set subtractive tare device, each of up to 14.995 kg maximum capacity may be fitted.

When the pre-set tare device is fitted, instruments are marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording).

- Model IWB-150 self-indicating multi-interval weighing instrument with a verification scale interval (e_1) of 0.02 kg up to 60 kg and with a verification scale interval (e_2) of 0.05 kg from 60 kg up to the maximum capacity of 150 kg.

  A semi-automatic and/or non-automatic keyboard-entered pre-set subtractive tare device, each of up to 59.98 kg maximum capacity may be fitted.

5. Description of Variant 4 approved 13/05/02

An Ishida model IWB-6 self-indicating multi-interval weighing instrument with a verification scale interval (e_1) of 0.001 kg up to 3 kg and with a verification scale interval (e_2) of 0.002 kg from 3 kg up to the maximum capacity of 6 kg.

6. Description of Variant 5 approved 6/11/02

The pattern and variants as single interval weighing instruments.

Instruments may be configured with the value of verification scale interval (*e*) equal to either the values e_1 or e_2 when approved as a multi-interval instrument, with a maximum of 3000 verification scale intervals.

For example, the model IWQ-30 is approved in variant 1 as a multi-interval weighing instrument with a verification scale interval (e_1) of 0.005 kg up to 15 kg and with a verification scale interval (e_2) of 0.01 kg from 15 kg up to the maximum capacity (*Max*) of 30 kg; it may now be configured as a single interval instrument with *e* of 0.01 kg and *Max* of 30 kg, or with *e* of 0.005 kg and *Max* of 15 kg.

Instruments are marked appropriately for single interval operation.

TEST PROCEDURE No 6/9C/267

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

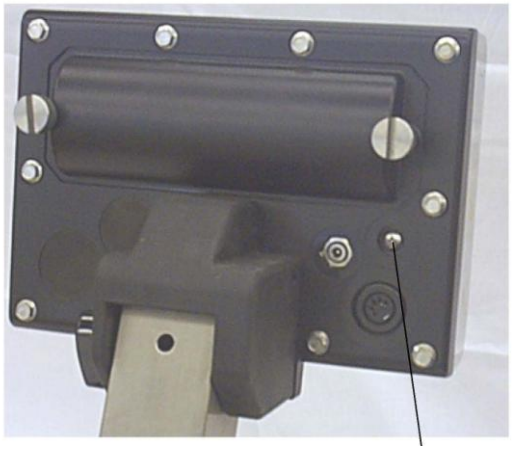
Tests

For multi-interval and multiple range instruments with verification scale intervals of e_1, e_2 …, apply e_1 for zero adjustment, and maximum permissible errors apply e_1, e_2 …, as applicable for the load.

FIGURE 6/9C/267 – 1

Ishida Model IWQ-150 Weighing Instrument (The Pattern)

FIGURE 6/9C/267 – 2



Showing Sealing - Model IWB-D Indicator Shown

FIGURE 6/9C/267 – 3

Ishida Model IWX-150 Weighing Instrument (Variant 2)

FIGURE 6/9C/267 – 4

Ishida Model IWB-30 Weighing Instrument (Variant 3)

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