



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Certificate of Approval NMI 6/4C/214

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 IPC Weighing Instrument

submitted by Heat & Control Pty Ltd
407 Creek Road
Mt 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 **1/11/21**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 & 2 approved – interim certificate issued	2/10/02
1	Pattern & variants 1 & 2 approved – interim certificate issued	29/10/02
2	Variant 3 approved – interim certificate issued	15/09/03
3	Variant 3 approved – certificate issued	15/10/03
4	Variant 4 approved – certificate issued	29/11/05
5	Pattern & variants 1 to 4 reviewed & amended (replace Figures 1 & 2) – notification of change issued	29/04/08
6	Pattern & variants 1 to 4 reviewed & updated – certificate issued	2/08/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) 6/4C/214' and only by persons authorised by the submitter.

It is the submitter'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.

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



Dr A Rawlinson

TECHNICAL SCHEDULE No 6/4C/214

1. Description of Pattern

approved on 2/10/02

An Ishida model IPC class III multi-interval self-indicating weighing instrument (Figure 1) with a verification scale interval (e_1) of 0.001 kg up to 1.5 kg and with a verification scale interval (e_2) of 0.002 kg from 1.5 kg up to the maximum capacity of 3 kg.

The instrument has integral liquid crystal operator and customer displays (Figures 1 and 2). The size of the instrument platter is nominally 200 × 230 mm.

Instruments may be fitted with output sockets for the connection of peripheral and/or auxiliary devices.

Instruments are powered by an Ishida model PS570-5V HC mains adaptor or by battery.

Instruments are approved for use over a temperature range of -5°C to $+40^{\circ}\text{C}$ and must be so marked.

1.1 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 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.

1.2 Tare

A semi-automatic subtractive tare device of up to 1.499 kg capacity may be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Levelling

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

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 destructible adhesive labels to prevent access to the switch on the main circuit board that allows calibration (see Figure 4).

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
Name or mark of manufacturer's agent	Heat & Control Pty Ltd
Indication of accuracy class	
Pattern approval number for the instrument	NMI or NSC 6/4C/214
Maximum capacity	<i>Max</i>/..... kg #1
Minimum capacity	<i>Min</i> kg #1
Verification scale interval	<i>e</i> =/..... kg #1
Maximum subtractive tare	<i>T</i> = - kg #2
Special temperature limits	-5°C to +40°C
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*.

2. Description of Variant 1 approved on 2/10/02

Without the customer display in which case instruments are marked NOT FOR TRADING DIRECT WITH THE PUBLIC or similar.

3. Description of Variant 2 approved on 2/10/02

Certain other capacities of IPC series multi-interval instruments with approved parameters as listed in Table 1. The pattern is shown in **bold** text.

TABLE 1 – Approved Capacities of IPC Series Instruments

<i>Max</i>	<i>e</i>	<i>Min</i>	<i>T</i>	Platter Size
1.5/3 kg	0.001/0.002 kg	0.02 kg	-1.999 kg	200 × 230 mm
3/6 kg	0.002/0.005 kg	0.04 kg	-2.998 kg	200 × 230 mm
7.5/15 kg	0.005/0.01 kg	0.1 kg	-7.495 kg	280 × 293 mm
15/30 kg	0.01/0.02 kg	0.2 kg	-14.99 kg	280 × 293 mm

4. Description of Variant 3 approved on 15/09/03

Ishida model IPC-WP multi-interval self-indicating weighing instruments in capacities as listed in Table 2.

IPC-WP instruments are similar to the IPC models but are fitted with a 'splash proof' option including a membrane between the platter bracket and the upper instrument housing (Figure 3). Sealing arrangement is shown in Figure 4.

TABLE 2 – Approved Capacities of IPC-WP Series Instruments

<i>Max</i>	<i>e</i>	<i>Min</i>	<i>T</i>	Platter Size
1.5/3 kg	0.001/0.002 kg	0.02 kg	-1.499 kg	229 × 196 mm
3/6 kg	0.002/0.005 kg	0.04 kg	-2.998 kg	229 × 196 mm
7.5/15 kg	0.005/0.01 kg	0.1 kg	-7.495 kg	229 × 196 mm

5. Description of Variant 4

approved on 29/11/05

The pattern or variants with an alternative load cell and/or circuit boards (details are held in NMI records).

The instruments do not differ functionally or in any externally visible physical way from the previously described pattern and variants

TEST PROCEDURE

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 the *National Trade Measurement Regulations 2009*.

Tests

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

Ensure that instruments are only being used within the special temperature limits stated elsewhere in this Technical Schedule.

FIGURE 6/4C/214 – 1



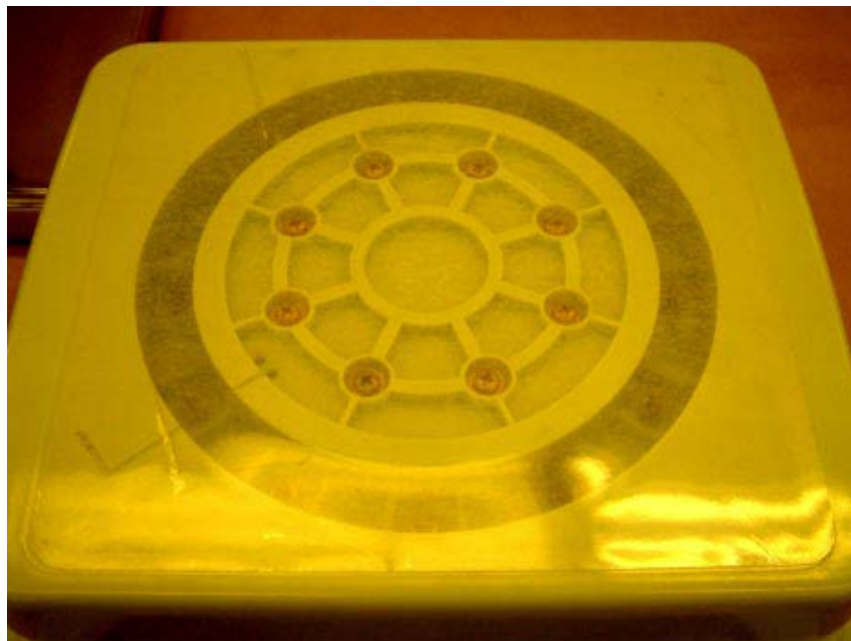
Ishida Model IPC Weighing Instrument (Pattern)

FIGURE 6/4C/214 – 2



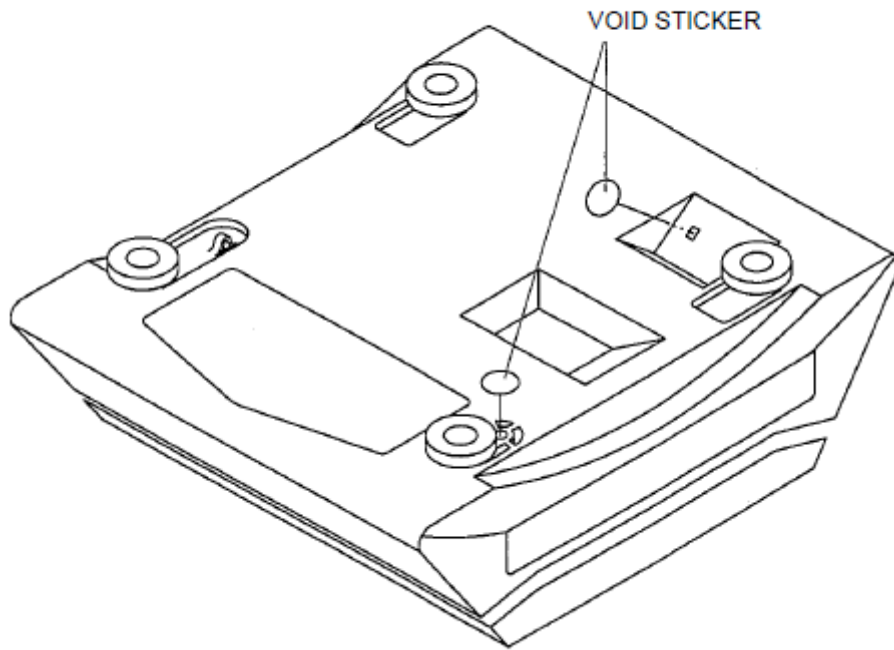
Ishida Model IPC Weighing Instrument – Customer Display

FIGURE 6/4C/214 – 3

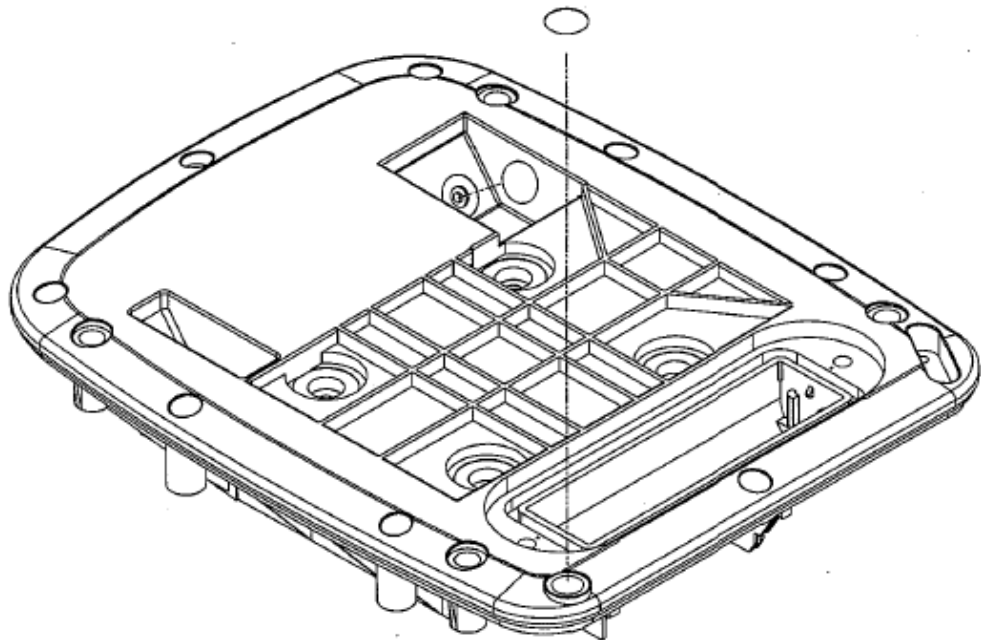


Typical Ishida IPC-WP Series Weighing Instrument (Variant 3)

FIGURE 6/4C/214 – 4



(a) Sealing method - Ishida IPC Series Weighing Instrument



(b) Sealing method - Ishida IPC-WP Series Weighing Instrument

Sealing methods

~ End of Document ~