

Australian Government

Department of Industry, Innovation and Science



36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/14G/22

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 WPL-5000 Automatic Catchweighing Instrument

submitted by Heat and 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 51, *Automatic Catchweighing Instruments*, dated July 2004.

This approval becomes subject to review on **1/05/14**, and then every 5 years thereafter.

Rev	Reason/Details	Date
0	Pattern & variants 1 to 3 approved – interim certificate issued	23/04/09
1	Pattern & variants 1 to 3 – certificate issued	24/08/09
2	Variant 4 approved – certificate issued	9/07/19

DOCUMENT HISTORY

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 6/14G/22' 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.

Special Condition of Approval:

Certain aspects of this instrument (in particular label formats) are able to be configured by the user. Whilst NMI believes that acceptable label and ticket formats can be achieved for typical basic sales modes, it is also possible for the instrument to be configured to produce unacceptable formats, and use of some formats may be inappropriate for different sales modes. It is the responsibility of the user to ensure that acceptable and appropriate formats are used in any particular situation.

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

m. for

Mario Zamora A/g Manager Policy and Regulatory Services

TECHNICAL SCHEDULE No 6/14G/22

1. Description of Pattern

approved on 6/07/06

An Ishida model WPL-5000 class Y(a) single interval automatic catchweighing instrument (Figure 1) which is approved for use to weigh objects while in motion.

Instruments have a price computing facility and are intended for use as weigh/price labellers.

Note: It may be possible for this instrument to operate in modes other than as an automatic catchweighing instrument (including the printing of labels with fixed weight or price values). Use of such modes is not approved. Also refer to the Special Condition of Approval.

1.1 Details

The pattern is a class Y(a) automatic catchweighing instrument with a verification scale interval (e) of 2 g up to the maximum capacity of 4 kg, with a minimum capacity of 0.04 kg.

Instruments are approved for use over a special temperature range of 0°C to +40°C and must be so marked.

The instrument operates dynamically (package in motion on the weighing receptor). The instrument has a conveyor speed, set at installation, which may be up to 70 m/min (1.17 m/s). The speed of the weighing receptor conveyor may vary, up to the set conveyor speed, according to factors such as the length of the article being weighed and the length of label to be printed.

The instrument detects conditions (e.g. excessive package length) for which acceptable weighing is not achieved and in such situations error messages are provided.

Guides are provided to minimise eccentric loading of the instrument.

Instruments may be fitted with sockets (output interfacing capability) for the connection of peripheral and/or auxiliary devices, and for the external programming of PLU and labelling data. The instrument may also operate in an "IN-LINE" mode in which an external computer manages various PLU and production instructions, with management data being returned to the external computer following completion of the production (weigh & labelling) run. Interfaces may be of the following types – digital input/output, Ethernet, RS-232 or RS-485.

The pattern comprises:

- A weighing unit with associated conveyor system, including infeed conveyor (and guides), weighing and outfeed conveyors;
- A display and operating terminal;
- One or more printing and label application units; and
- Associated electronic/electrical control circuitry.

The above items are provided in two (or more) main sections which are connected and bolted together to form the complete instrument.

1.2 Zero

The instrument has zero setting devices (having a nominal range of not more than 4% of the maximum capacity of the instrument) which operate to zero the instrument to within $\pm 0.25e$,

- a) at switch-on of the instrument (initial zero-settiing),
- b) when the zero button is pressed,
- c) whilst the conveyor is not operating, to adjust for small, gradual changes in zero (zero-tracking device),
- d) at the start of automatic operation, and
- e) during automatic operation, whilst the conveyor is empty.

Where the instrument is not able to successfully zero the instrument, this is indicated by a sound or message (except in the case of (c)).

1.3 Tare

The instrument has a pre-set subtractive taring device of up to 3.998 kg. Pre-set tare values may be stored in association with product-look-up (PLU) items.

1.4 Operation

After switch-on the weighing instrument carries out a checking sequence.

The instrument may remind the operator to carry out an initial weight check (for quality control purposes).

Once a product-look-up (PLU) item has been selected (e.g. via the 'PLU No.' item on the touch screen), the START key on the operator console is used to start the conveyors and the weighing and labelling operations.

An object to be weighed moves from the infeed conveyor(s) to the weighing conveyor and is weighed dynamically. After weighing, the object continues onto the outfeed conveyor(s) where a label is printed and applied to the object.

If the instrument is unable to obtain an acceptable weight reading, error messages are displayed and a label is not printed.

Note: The operation of the instrument also includes actions related to operation and positioning of the printer units, and other label formatting and management information related operations, such as the maintenance of PLU information – these have largely been omitted from the above description. Also see the note under clause **1. Description of Pattern** and the Special Condition of Approval.

1.5 Display and Control Electronics (Figure 2)

The instrument display and operating terminal (touch screen liquid crystal display and keyboard) is mounted to provide ease of access to the operator. The conveyor control and weighing system electronics are housed in a scale control unit cabinet. A main control unit provides overall system control including interfacing to printers.

The weight value is displayed in kg or g (refer also to Variant 3).

Instruments have a price-computing facility with unit price to \$999.99/kg, price to \$9999.99, a display of the pre-set tare value and a product-look-up (PLU) facility.

1.6 Weighing Unit and Conveyors

The weighing unit of the Ishida model WPL-5000 catchweigher uses an Ishida model TLC-30LT load cell of 30 kg maximum capacity, which is located directly below the load receptor (beneath a cover which also covers the conveyor drive motor) – Figure 3.

The load receptor (belt conveyor of the weighing unit) has dimensions of 480×300 mm. A draft cover is provided over the weighing area.

The load cell power supply, and signal processing electronics are housed in the weighing control unit cabinet (behind the weighing and infeed conveyors).

The conveyor system comprises an infeed conveyor, the weighing receptor conveyor and outfeed conveyor(s), with an associated electric motor and drive arrangement for each conveyor. The drive arrangement (control electronics) for the infeed and weighing receptor conveyors is contained within the weighing control unit cabinet, for the outfeed conveyor(s) the drive arrangement is contained within the main control unit cabinet, or control cabinets associated with additional printer units.

Optical sensors are located along the conveyor path. The infeed conveyor can space the objects to be weighed and the side guides may be automatically adjusted (according to PLU data) to suit the pack size.

Where instruments are liable to be tilted (i.e. they are not installed in a permanently fixed location as is normally intended for this instrument) they are provided with adjustable feet and a level indicator. Adjacent to the level indicator is a notice stating 'instrument must be level when in use', or similar wording.

1.7 Printing Unit

The printing unit is comprised of a printer with associated electronics, utilising compressed air to apply the label to the weighed object.

Alternative or additional printer arrangements, including equipment such as base labelling units or units utilising other label application methods may be used. More than one printing unit may be provided.

Please note the Special Condition of Approval regarding printing formats.

1.8 Verification Provision

Provision is made for the application of a verification mark.

1.9 Sealing Provision

Provision is made for the calibration adjustments to be sealed by restricting access within the housing containing the instrument electronics – by means of destructible adhesive labels placed at each end of the cover (Figure 4a). Alternatively the cover for the A/D board within the instrument housing may be sealed, and provision made (e.g. by either a transparent plastic cover or a grommet) for checking from outside the instrument housing that the seal in intact (see Figure 4b) – the acceptability of this alternative is at the discretion of the appropriate trade measurement authority.

1.10 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full Importer's mark, or name written in full	Ishida Co Ltd Heat and Control Pty Ltd
Model designation	
Serial number	
Accuracy class	Y(a)
Pattern approval mark	6/14G/22
Maximum capacity	<i>Max</i> kg
Minimum capacity	<i>Min</i> kg
Verification scale interval	<i>e</i> = kg
Maximum subtractive tare	<i>T</i> = kg
Maximum conveyor speed	m/min or m/s
Special temperature limits	°C to +°C (#)

 (#) -0°C to 40°C (for the pattern and variant 1); or -5°C to 40°C (for variant 2).

2. Description of Variant 1

The Ishida model WPL-5000 instrument having a maximum capacity of 2 kg, a verification scale interval of 0.001 kg, and a minimum capacity of 0.02 kg.

This variant has a maximum subtractive pre-set tare of 1.999 kg.

Special temperature limits of 0°C to 40°C apply, as does the maximum belt speed of 70 m/min.

3. Description of Variant 2

The pattern or variant 1, now having special temperature limits of -5°C to 40°C in which case the maximum belt speed is 65 m/min (1.08 m/s).

4. Description of Variant 3

In situations where the instrument is intended to be used for packing items for export, the instrument may be provided with alternative units and currency denominations (e.g. lb, \pm , \pm). In this case instruments shall be marked 'UNITS OTHER THAN kg and \$ MAY ONLY BE USED FOR EXPORT PURPOSES'.

5. Description of Variant 4

The Ishida model WPL-AI-S class Y(a) single interval automatic catchweighing instrument (Figures 5a and 5b) which is similar to the pattern but having a revised terminal/indicator with updated printed circuit boards and of certain capacities as listed in Table 1.

approved on 23/04/09

approved on 23/04/06

approved on 23/04/09

approved on 9/07/19

5.1 Software

The legally relevant software version is designated B0452B.

The software version and number can be seen in the switch-on display sequence (when the power is first applied to the instrument).

5.2 Sealing Provision

Provision is made for the calibration adjustments to be sealed by means of a destructible adhesive label placed over the securing screw for the A/D board cover within the instrument housing, and provision made (e.g. by either a transparent plastic cover or a grommet) for checking from outside the instrument housing that the seal in intact (see Figure 4b).

Maximum Capacity (<i>Max</i>)	Minimum Capacity (<i>Min</i>)	Verification Scale Interval (<i>e</i>)	Maximum Operating Speed	Temperature Limit	Load cell
2 kg	0.020 kg	0.001 kg	65 m/min	-5°C to 40°C	TLC-30LT
2 kg	0.020 kg	0.001 kg	70 m/min	0°C to 40°C	TLC-30LT
4 kg	0.040 kg	0.002 kg	65 m/min	-5°C to 40°C	TLC-30LT
6 kg	0.100 kg	0.005 kg	49 m/min	-5°C to 40°C	TLC-60LT
6 kg	0.100 kg	0.005 kg	53 m/min	0°C to 40°C	TLC-60LT
6.5 kg	0.100 kg	0.005 kg	49 m/min	-5°C to 40°C	TLC-60LT
6.5 kg	0.100 kg	0.005 kg	53 m/min	0°C to 40°C	TLC-60LT

TABLE 1

TEST PROCEDURE No 6/14G/22

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

Maximum Permissible Errors

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

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

Tests

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

Automatic (dynamic) Operation

- Prepare two test objects, one close to minimum capacity and the other close to the maximum capacity. The uncertainty of the test masses shall be equal to or better than 0.5*e*.
- The tests shall be conducted at the maximum rate at which the system will operate (i.e. introduce packages immediately after each other).
- Vary the position of the test masses across the load receptor.
- Conduct a test to ensure incorrect measurements do not occur due to items being provided to the instrument without adequate spacing.



Ishida Model WPL-5000 Automatic Catchweighing Instrument

	LIC
Off-line PLU NO. 0000 27/0CT/2008(WON) 14:51	
Make sure to do Initial weight check.	1
Zero Weight Unit price (\$ < kg) Price	
Tare(kg) 0.000kg \$ 0.00 \$ 0.00 FREE3	
Display until Use by Mark down Tray FRE4	
Remaining Pack Lower Upper FREE5	
Shop Waiting Wode	
UUUU Pricing INPUT	
Pnt. Pos Pnt. Wov Feed Receive Send Calc. Key Lock	
WPL-5000	
START	
	1
PAUSE	

Ishida Model WPL-5000 – Display and Operating Terminal



Weighing Unit of the Model WPL-5000 Catchweigher Showing The Ishida Model TLC-30LT Load Cell



WPL-5000 with draft cover removed.

(a) Seal each end of weighing control unit cabinet, so that any access is evident.



(b) An Alternative Sealing Method



(a) Ishida Model WPL-AI-S Automatic Catchweighing Instrument

WPL : HOME						10:31 24.06.	:21 2019
PT kg	ZERO WE	IGHT	kg UNIT PRICE		\$/ kg T	OTAL PRIC	E \$
0.000		0.00	0	0	0.00		0.00
→0 ←		₩	0.0	in)	SUMMARY	/	
-			SPEED(III/III		PACK DAT	A F	
0					Preview	-	
PLU NO.		PLU I	NAME		Rank: 1	Printer: 1	Format: 0
-		-	0				
TARGET PACK	UF	PER LIMIT(kg)	TRAY NO	0.			
0		-	WEIGH	HT 🔰			
GOOD PACK	LO	WER LIMIT(kg)	WEIGHING	FLAG			
		0					
		MarkDown	Used By D	Date			
OPERATION	PREVIEW	GRAPH	PRINTER	PRESI	ET	HELP	
		- 0.1kg					\Diamond

(b) Ishida Model WPL-AI-S - Display

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