



Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

No 6/4D/309

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

Ishida Model ASTRA XT Weighing Instrument

submitted by Heat & 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.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 December 2012, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NSC 6/4D/309' 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.

The National Measurement Institute reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

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

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.

DESCRIPTIVE ADVICE

Pattern: approved 14 March 2003

- An Ishida model ASTRA XT class ㉓ non-automatic self-indicating price-computing multi-interval weighing instrument of 15 kg maximum capacity.

Technical Schedule No 6/4D/309 describes the pattern.

Variants: approved 12 May 2003

1. An Ishida model AC-4000B weighing instrument.
2. An Ishida model AC-4000 weighing instrument.

Variant: approved 4 July 2003

3. An Ishida model AC-4000E weighing instrument.

Technical Schedule No 6/4D/309 Variation No 1 describes variants 1 to 3.

Variant: approved 29 June 2005

4. An Ishida model AC-4000D weighing instrument.

Technical Schedule No 6/4D/309 Variation No 2 describes variant 4.

Variants: approved 12 January 2006

5. An Ishida model WM-4000 weighing instrument.
6. An Ishida model WM-4000-DF weighing instrument.

Technical Schedule No 6/4D/309 Variation No 3 describes variants 5 and 6.

Variant: approved 23 July 2007

7. An Ishida model IP-EMZ weighing instrument.

Technical Schedule No 6/4D/309 Variation No 4 describes variant 7.

Variants: approved 24 October 2008

8. The Ishida models BC-4000L2 and BC-4000S2 weighing instruments.
9. The Ishida models BC-4000S, BC-4000E and BC-4000L1 weighing instruments.
10. An Ishida model BC-4000L2H (hanging) weighing instrument.

Technical Schedule No 6/4D/309 Variation No 5 describes variants 8 to 10.

Variant: approved 7 April 2010

11. The Ishida model SR-2000 α weighing instrument.

Technical Schedule No 6/4D/309 Variation No 6 describes variant 11.

Variants: approved 19 October 2011

12. An Ishida model WM-NANO weighing instrument.
13. An Ishida model UNI-7 type RP weighing instrument.

Technical Schedule No 6/4D/309 Variation No 7 describes variants 12 and 13.

FILING ADVICE

Certificate of Approval No 6/4D/309 dated 8 April 2010 is superseded by this Certificate, and may be destroyed. The documentation for this approval now comprises:

- Certificate of Approval No 6/4D/309 dated 1 December 2011
- Technical Schedule No 6/4D/309 dated 11 February 2003 (incl. Test Procedure)
- Technical Schedule No 6/4D/309 Variation No 1 dated 11 July 2003
- Technical Schedule No 6/4D/309 Variation No 2 dated 7 July 2005
- Technical Schedule No 6/4D/309 Variation No 3 dated 13 January 2006
- Technical Schedule No 6/4D/309 Variation No 4 dated 24 July 2007
- Technical Schedule No 6/4D/309 Variation No 5 dated 27 October 2008
- Technical Schedule No 6/4D/309 Variation No 6 dated 8 April 2010
- Technical Schedule No 6/4D/309 Variation No 7 dated 1 December 2011 (incl. Table 1)
- Figures 1 and 2 dated 11 February 2003
- Figure 3 dated 11 July 2003
- Figures 4 and 5 dated 7 July 2005
- Figures 6 to 9 dated 13 January 2006
- Figure 10 dated 24 July 2007
- Figure 11 to 14 dated 27 October 2008
- Figures 15 and 16 dated 8 April 2010
- Figures 17 and 18 dated 1 December 2011

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



TECHNICAL SCHEDULE No 6/4D/309

Pattern: Ishida Model ASTRA XT Weighing Instrument.
Submittor: Heat & Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122.

1. Description of Pattern

An Ishida model ASTRA XT self-indicating price-computing multi-interval weighing instrument (Figure 1) with a verification scale interval (e_1) of 0.002 kg up to 6 kg and with a verification scale interval (e_2) of 0.005 kg from 6 kg up to the maximum capacity of 15 kg.

Instruments have unit price to \$999.99/kg, price to \$9999.99, and a price-look-up (PLU) facility and an integral label printer.

The operator and customer displays are either integral within the instrument (Figure 1) or may be mounted on a column.

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

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

1.1 Zero

Zero is automatically corrected to within $\pm 0.25e_1$ 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.

1.2 Tare

A semi-automatic and/or non-automatic keyboard-entered pre-set subtractive tare device, each of up to 5.998 kg maximum capacity may be fitted.

Pre-set tare values may also be associated with PLU keys.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Levelling

Instruments 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.

1.5 Sealing Provision

Provision is made for the calibration adjustments to be sealed by means of the sealing screws provided in two positions on the underside of the instrument and in one position on the left side of the instrument (Figure 2).

1.6 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

1.7 Descriptive Markings

Instruments carry the following markings:

| | |
|--|------------------------|
| 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 | Ⓜ |
| Low range | |
| Maximum capacity | Max kg * |
| Verification scale interval | e = kg * |
| High range | |
| Maximum capacity | Max kg * |
| Verification scale interval | e = kg * |
| Tare capacity | T = - kg |
| Serial number of the instrument | |
| Pattern approval mark for the instrument | NSC No 6/4D/309 |
| Special temperature limits | -5°C to +40°C |

* These markings shall also be shown near the display of the result if they are not already located there.

TEST PROCEDURE

Instruments should be tested in accordance with any relevant tests specified in the Uniform Test Procedures.

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors for increasing and decreasing loads on initial verification/certification for loads, m , expressed in verification scale intervals, e , are:

- $\pm 0.5 e$ for loads $0 \leq m \leq 500$;
- $\pm 1.0 e$ for loads $500 < m \leq 2\,000$; and
- $\pm 1.5 e$ for loads $2\,000 < m \leq 10\,000$.

For multi-interval instruments with verification scale intervals of e_1, e_2, \dots , apply e_1 for zero adjustment, and for 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.

TECHNICAL SCHEDULE No 6/4D/309
VARIATION No 1

Pattern: Ishida Model ASTRA XT Weighing Instrument

Submittor: Heat & Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122

1. Description of Variants

1.1 Variant 1

An Ishida model AC-4000B (Figure 3) weighing instrument which has an alphanumeric display for product information and an integral printer.

1.2 Variant 2

An Ishida model AC-4000 weighing instrument which has an alphanumeric display for product information and a removable label or ticket cassette (to aid label or ticket replacement).

1.3 Variant 3

An Ishida model AC-4000E weighing instrument which is similar to the pattern (model XT) with the operator and customer displays mounted on a column.

This instrument does not have an alphanumeric display nor a removable printer cassette.

1.4 Sealing Provision

For the AC-4000 series of instruments, provision is made for the calibration adjustments to be sealed by means of the sealing screws provided in two positions on the underside of the instrument and in one position located under the load receptor.

NOTIFICATION OF CHANGE

In Technical Schedule No 6/4D/309 dated 11 February 2003, clause **1.7 Descriptive Markings** should be amended as detailed below.

(i) Add the following marking requirement:

Minimum capacity *Min* kg *

(ii) Add the following footnote:

Note: The markings for 'Maximum capacity (*Max*)' and 'Verification scale interval (*e*)' for the two interval ranges, may alternatively be shown in the following format;

Maximum capacity *Max*/..... kg *

Verification scale interval *e*/..... kg *

TECHNICAL SCHEDULE No 6/4D/309

VARIATION No 2

Pattern: Ishida Model ASTRA XT Weighing Instrument
Submittor: Heat & Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122

1. Description of Variant 4

An Ishida model AC-4000D (Figure 4) weighing instrument which is designed for pre-package operation, i.e. it is not approved for trading direct with the public and a notice indicating this is fixed to the display module. The instrument is made up of three separate modules that include the basework, the printer and the display/keyboard which also has an alphanumeric display for product information.

Provision is made for the calibration adjustments to be sealed by means of the sealing screws provided at the rear of the printing module (Figure 5); a destructible adhesive label can be used as an alternative. The side cover of the printing module must also be sealed by means of labels wrapped around two opposite sides of the cover as shown in Figure 5.

TECHNICAL SCHEDULE No 6/4D/309

VARIATION No 3

Pattern: Ishida Model ASTRA XT Weighing Instrument

Submittor: Heat & Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122

1. Description of Variants

1.1 Variant 5

An Ishida model WM-4000 (Figure 6) weighing instrument which is designed as a weigh/wrap/labeller for pre-package operation, i.e. it is not approved for trading direct with the public and a notice indicating this is fixed to the display module.

Instruments may be fitted with either a single label printer or dual printers.

Instruments are non-automatic weighing instruments (they require the presence of an operator), and are approved for static weighing only.

Note that the maximum weight of packages that can be wrapped may be less than the maximum weighing capacity.

Instruments have a weighing platter with the size of the area which is suitable for loading being 345 mm x 265 mm (the overall size of the load receptor is 367 mm x 310 mm).

Instruments are provided with a level indicator (bubble) visible through a window in the platter of the instrument. A notice "Instrument must be level when in use", or similar shall be provided in a location clearly visible to the operator and adjacent to the level indicator.

Provision is made for the calibration adjustments to be sealed by means of destructible adhesive labels preventing access to the calibration switch located in the platform casing, below the weighing receptor. A label over one of the access screws and over the opening which provides access to this switch can achieve this, as shown in Figure 7. Note: the platter can be removed without tools for sealing, and for checking of sealing status.

1.2 Variant 6

An Ishida model WM-4000-DF (Figure 8) weighing instrument which is designed as a weigh/wrap/labeller for pre-package operation, i.e. it is not approved for trading direct with the public and a notice indicating this is fixed to the display module.

Instruments may be fitted with either a single label printer or dual printers.

Instruments are non-automatic weighing instruments (they require the presence of an operator), and are approved for static weighing only.

Note that the maximum weight of packages that can be wrapped may be less than the maximum weighing capacity.

Instruments have a weighing platter with the size of the area which is suitable for loading being 269 mm x 165 mm (the overall size of the load receptor is 273 mm x 265 mm).

Instruments are provided with a level indicator (bubble). This is located behind a hinged cover of the instrument. A notice "Instrument must be level when in use", or similar shall be provided in a location clearly visible to the operator and adjacent to the level indicator. In addition this notice shall indicate the location of the level indicator (e.g. "Level bubble provided behind this cover").

Provision is made for the calibration adjustments to be sealed by means of destructible adhesive labels preventing access to the calibration switch located in the platform casing, below the weighing receptor. A label over one of the access screws and over the opening which provides access to this switch can achieve this – a similar arrangement to that shown in Figure 7. Access to this area (shown in Figure 9) is available via the hinged cover which also provides access to the level bubble. Note: It is acknowledged that access to the sealing location is not ideal and the use of tools to remove other covers of the instrument may be needed to provide better access. If the access arrangements are not satisfactory to trade measurement authorities they may require additional or alternative sealing arrangements which prevent access to the calibration switch.

TECHNICAL SCHEDULE No 6/4D/309

VARIATION No 4

Pattern: Ishida Model ASTRA XT Weighing Instrument

Submittor: Heat & Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122

1. Description of Variant 7

An Ishida model IP-EMZ weighing instrument (Figure 10a) which is designed as a weigh/labelling instrument for pre-packaging purposes. The instrument is not approved for trading direct with the public and a notice indicating this is fixed to the display module.

Instruments may be fitted with either a single label printer or dual printers.

The load receptor is 254 mm × 400 mm.

Instruments are provided with a level indicator (bubble) visible through a window in the platter of the instrument. A notice stating 'Instrument must be level when in use', or similar, shall be provided in a location clearly visible to the operator and adjacent to the level indicator.

Provision is made for the calibration adjustments to be sealed by sealing the platform support to the instrument (by means of a lead and wire or similar type seal), and by use of destructible adhesive labels to restrict access to the calibration switch which is located below a cover beneath the platter. See Figure 10b.

NOTE: The date at which this approval becomes due for review has been amended following completion of a review.

TECHNICAL SCHEDULE No 6/4D/309

VARIATION No 5

Pattern: Ishida Model ASTRA XT Weighing Instrument
Submittor: Heat & Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122

1. Description of Variants

1.1 Variant 8

An Ishida model BC-4000L2 weighing instrument (Figure 11a) which is similar to the model AC-4000B (variant 1) but which has some changes to the cosmetic design, display and internal circuitry.

The model BC-4000L2 is approved for use over a temperature range of -10°C to +40°C (as this is the normal range for a weighing instrument, the special temperature limits mentioned for the pattern are not required to be marked).

The model BC-4000L2 uses a column-mounted liquid crystal display (LCD) incorporating an alphanumeric display for product information, and has an integral printer.

The model BC-4000S2 weighing instrument (Figure 11b) is similar to the model BC-4000L2 but uses an electro-fluorescent display

These model instruments may alternatively be provided in a 'bench' version in which the displays are incorporated within the instrument housing. A model BC-4000L2 bench version is also shown in Figure 11a.

Provision is made for the calibration adjustments to be sealed by means of the sealing screws provided in two positions as shown in Figure 12.

1.2 Variant 9

An Ishida model BC-4000S weighing instrument (Figure 13a) which is similar to the models BC-4000L2 and BC-4000S2 (variant 8) but which does not have the alphanumeric display for product information. The displays may be integral within the instrument housing or mounted on a column.

The model BC-4000S is approved for use over a temperature range of -10°C to +40°C (as this is the normal range for a weighing instrument, the special temperature limits mentioned for the pattern are not required to be marked).

The model BC-4000S uses an electro-fluorescent display.

The model BC-4000E weighing instrument (Figure 13b) is similar to the model BC-4000S but uses a light emitting diode (LED) display.

The model BC-4000L1 weighing instrument is similar to the model BC-4000S but uses a liquid crystal display (LCD).

Sealing arrangements are as shown in Figure 12.

1.3 Variant 10

An Ishida model BC-4000L2H weighing instrument (Figure 14) which is similar to the model BC-4000L2 (variant 8) however this instrument is in the form of a hanging scale.

The BC-4000L2H is intended to be installed in a fixed position (a level bubble is provided for installation purposes, but a level notice is not required).

Provision is made for the calibration adjustments to be sealed by sealing the latch at the left side of the instrument (Figure 14).

TECHNICAL SCHEDULE No 6/4D/309

VARIATION No 6

Pattern: Ishida Model ASTRA XT Weighing Instrument

Submitter: Heat & Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122

1. Description of Variant 11

An Ishida model SR-2000 α ('SR-2000 alpha') weighing instrument (Figure 15) which is similar to the model AC-4000B (variant 1).

The model SR-2000 α is approved for use over a temperature range of -5°C to +40°C (these special temperature limits shall be marked on the instrument nameplate).

The model SR-2000 α includes a touch sensitive liquid crystal display panel/ keyboard for the operator, a column-mounted electro-fluorescent display incorporating an alphanumeric display for product information for the customer, and an integral label printer.

The model SR-2000 α instrument may alternatively be provided in a 'bench' version in which the customer display is incorporated within the instrument housing.

Provision is made for the calibration adjustments to be sealed by means of the sealing screws provided in two positions as shown in Figure 16.

TECHNICAL SCHEDULE No 6/4D/309

VARIATION No 7

Pattern: Ishida Model ASTRA XT Weighing Instrument

Submittor: Heat & Control Pty Ltd
407 Creek Road
Mount Gravatt QLD 4122

1. Description of Variants

1.1 Variant 12

An Ishida model WM-NANO weighing instrument (Figure 17) which is designed as a weigh/wrap/labeller for pre-package operation. The instrument is not approved for trading direct with the public and a notice indicating this is fixed to the display module.

Instruments include an indicator unit (similar to that on the model UNI-7 RP, variant 13) and a pre-package unit in which the weighing platform is located.

Instruments are self-indicating price-computing non-automatic weighing instruments (they require the presence of an operator), and are approved for static weighing only.

The model WM-NANO may be configured as single or multi-interval instruments with approved specifications are listed in Table 1.

Note that the maximum weight of packages that can be wrapped may be less than the maximum weighing capacity.

Instruments may be fitted with a label printer.

Instruments have a 300 mm × 400 mm weighing platter.

Instruments are provided with a level indicator, located behind a hinged cover of the instrument. A notice advising that the instrument must be level when in use (or similar wording) shall be provided in a location clearly visible to the operator and adjacent to the level indicator. In addition this notice shall indicate the location of the level indicator (e.g. "Level bubble provided behind this cover").

Provision is made for the calibration adjustments to be sealed by means of destructible adhesive labels preventing access to the calibration switch located in the platform casing, below the weighing receptor. A label over one of the access screws and over the opening which provides access to this switch can achieve this – a similar arrangement to that shown in Figure 17b. Access to this area is available via the hinged cover which also provides access to the level bubble.

Note: It is acknowledged that access to the sealing location is poor and the use of tools to remove other covers of the instrument may be needed to provide good access. If the access arrangements are not satisfactory to trade measurement authorities they may require additional or alternative sealing arrangements which prevent access to the calibration switch.

1.2 Variant 13

An Ishida model UNI-7 type RP weighing instrument (Figure 18) which is designed as a weigh/labelling instrument for pre-packaging purposes. The instrument is not approved for trading direct with the public and a notice indicating this is fixed to the display module.

The model UNI-7 type RP may be configured as single or multi-interval instruments with approved specifications are listed in Table 1.

Instruments may be fitted with a label printer.

The load receptor size is 250 mm × 400 mm.

Instruments are provided with a level indicator (bubble) visible through a window in the platter of the instrument. A notice advising that the instrument must be level when in use (or similar wording), shall be provided in a location clearly visible to the operator and adjacent to the level indicator.

Provision is made for the calibration adjustments to be sealed by sealing the platform support to the instrument (by means of a lead and wire or similar type seal), and by use of destructible adhesive labels to restrict access to the calibration switch which is located below a cover beneath the platter (Figure 18b).

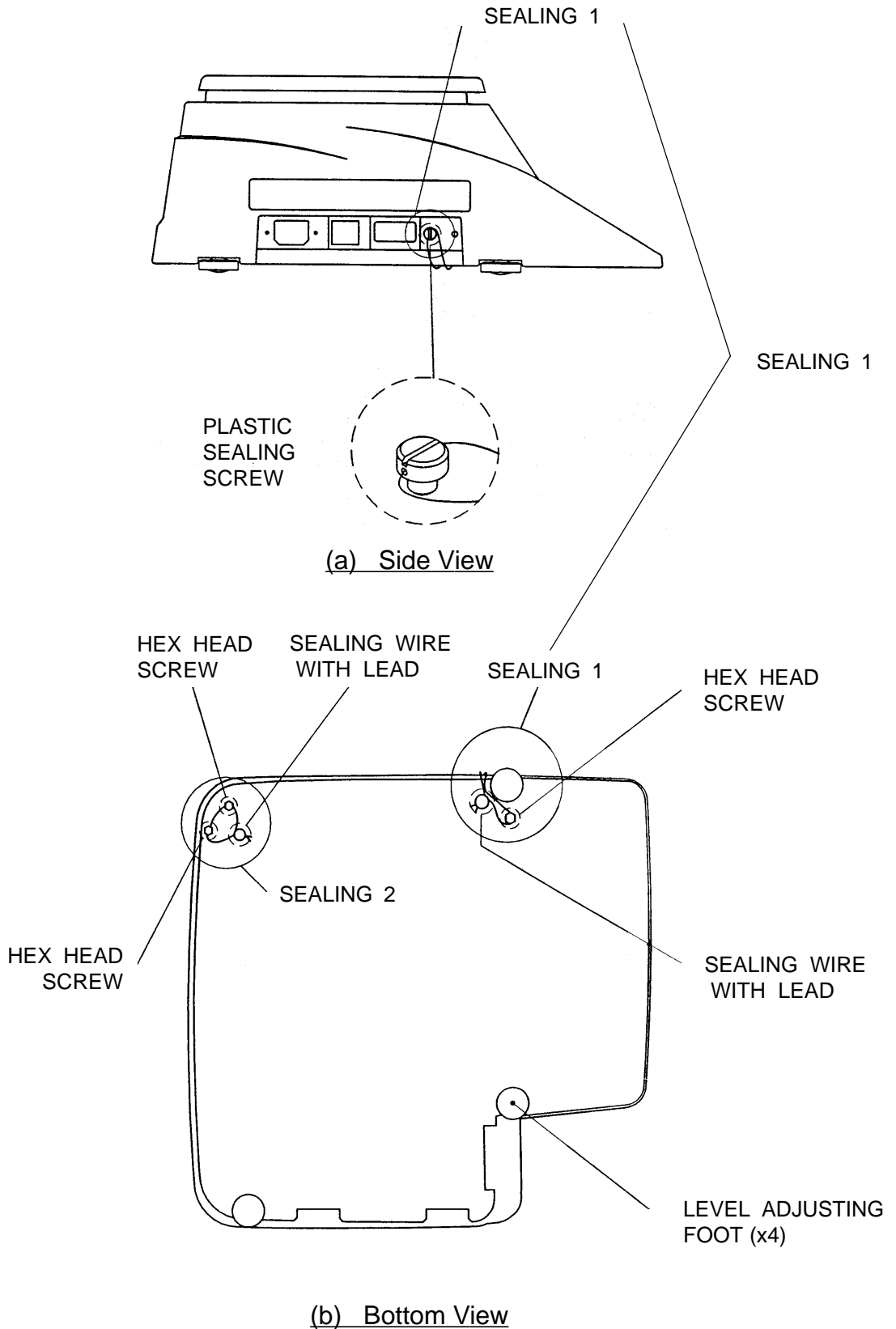
TABLE 1

| Model | WM-NANO | | UNI-7 Type RP | |
|---------------------|--|-----------|---------------|-----------|
| Maximum capacity | 6/15 kg | 15 kg | 6/15 kg | 15 kg |
| Scale interval | 2/5 g | 5 g | 2/5 g | 5 g |
| Minimum capacity | 40 g | 100 g | 40 g | 100 g |
| Maximum tare | -5.998 kg | -9.995 kg | -5.998 kg | -9.995 kg |
| Working temperature | -10°C to +40°C | | | |
| Load cell models | Ishida CLC-25L or NMB CLC-25N each of 25 kg capacity | | | |

FIGURE 6/4D/309 - 1



FIGURE 6/4D/309 - 2



Showing Sealing

FIGURE 6/4D/309 – 3



Ishida model AC-4000B Weighing Instrument

FIGURE 6/4D/309 – 4

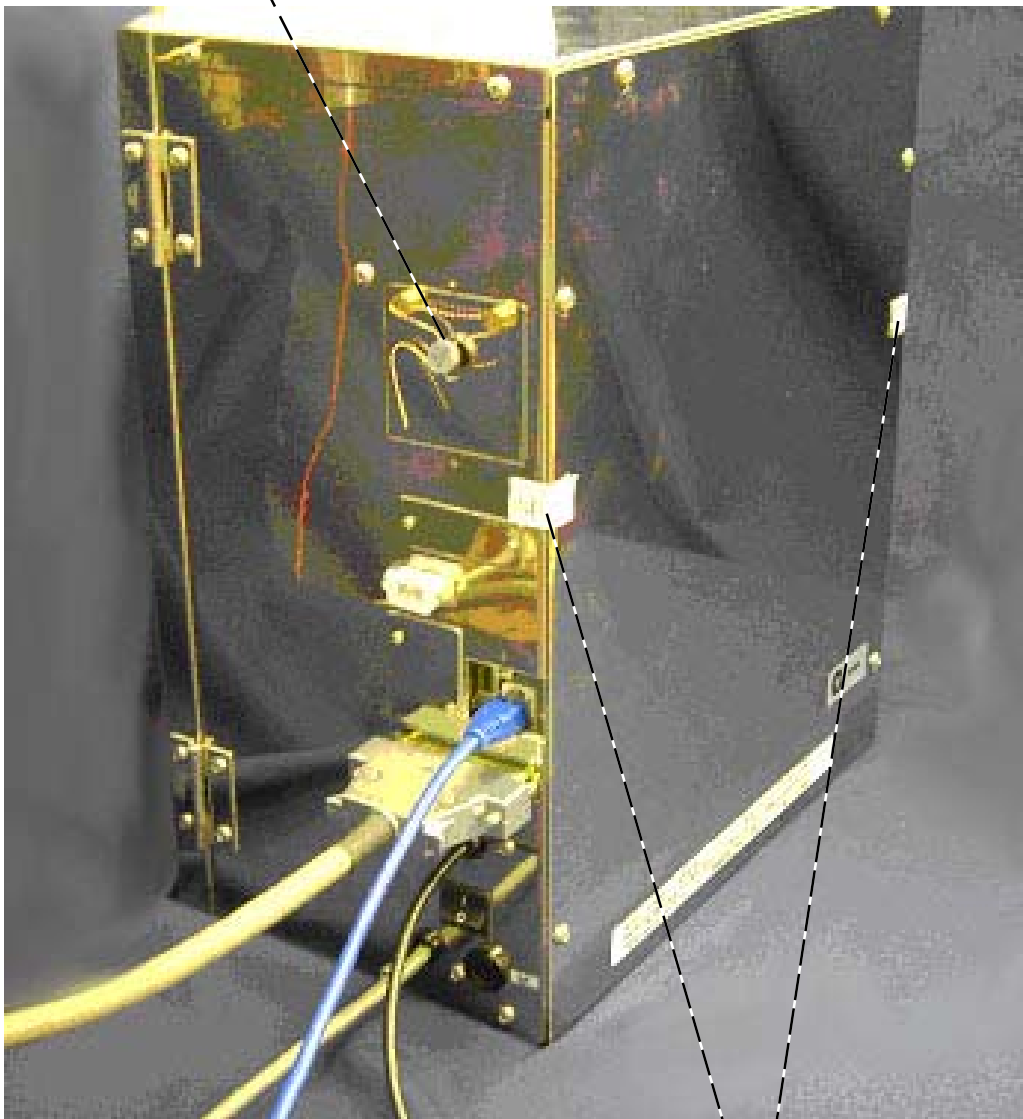


An Ishida Model AC-4000D Weighing Instrument

6/4D/309
7 July 2005

FIGURE 6/4D/309 – 5

Typical Sealing of Printing Unit Calibration Access



Typical Sealing of Printing Unit Side Cover V

Typical Sealing for Model AC-4000D (Variant 4)

FIGURE 6/4D/309 – 6



Ishida Model WM-4000

6/4D/309
13 January 2006

FIGURE 6/4D/309 – 7



Ishida Model WM-4000 sealing (below platter)

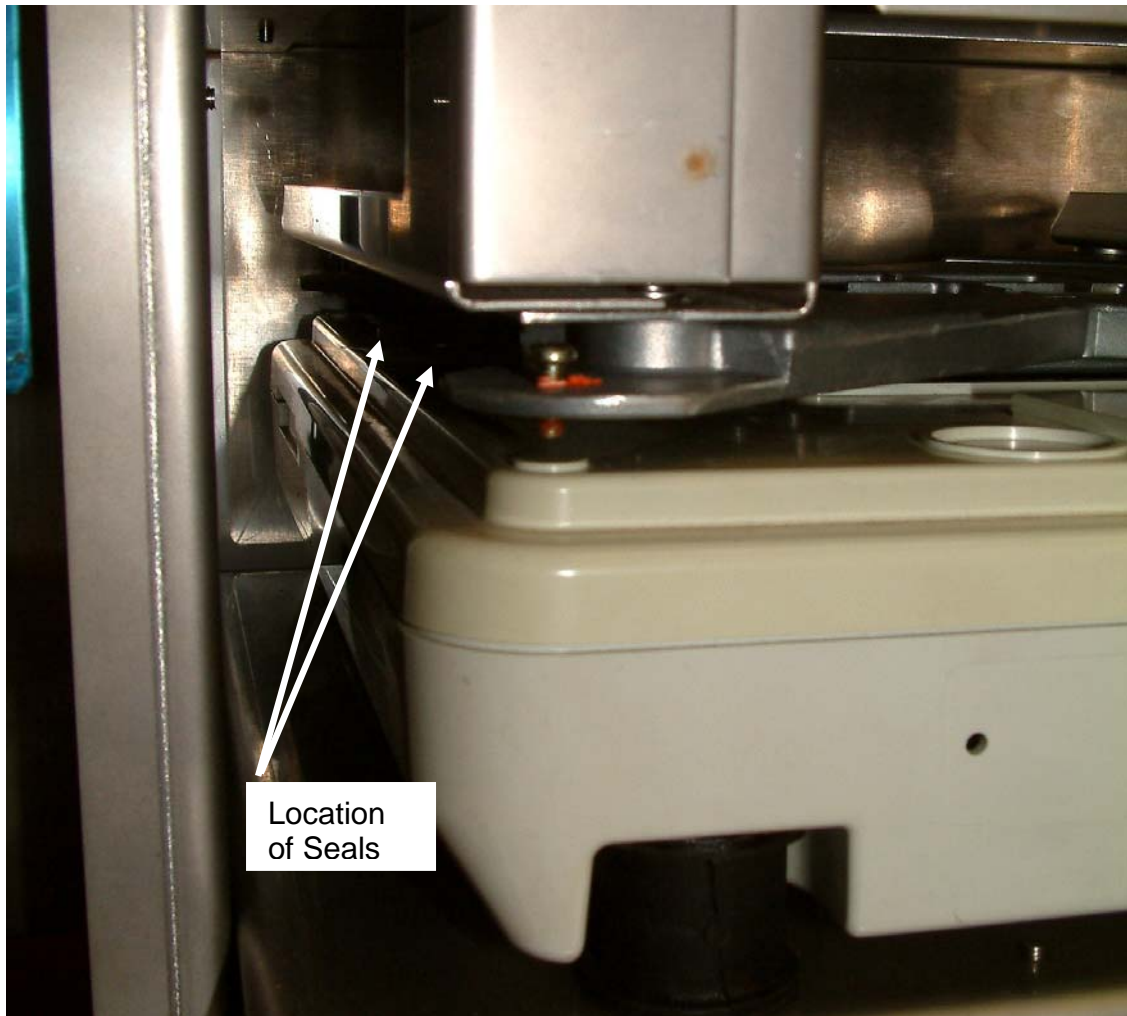
FIGURE 6/4D/309 – 8



Ishida Model WM-4000-DF

6/4D/309
13 January 2006

FIGURE 6/4D/309 – 9

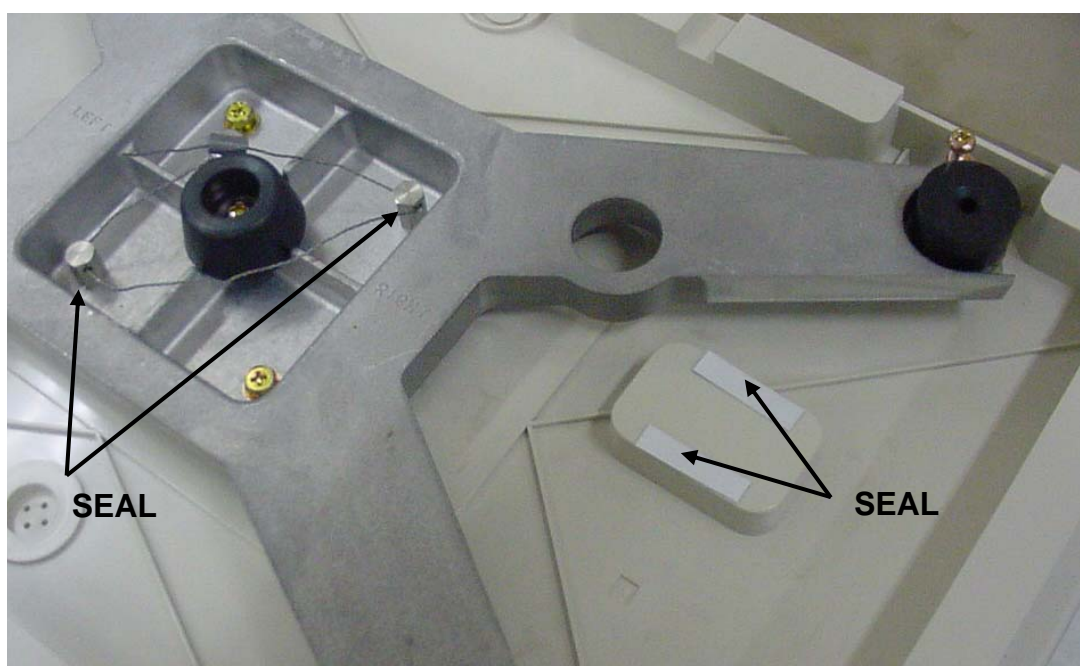


Ishida Model WM-4000 DF sealing (below platter)

FIGURE 6/4D/309 – 10



(a) Model IP-EMZ Instruments, Single and Dual Printer Versions



(b) Ishida Model IP-EMZ Weighing Instrument (including Typical Sealing)

FIGURE 6/4D/309 – 11



(a) Model BC-4000L2 – Bench and Column-mounted-display Versions



(b) Model BC-4000S2 – Column-mounted-display Version

FIGURE 6/4D/309 – 12



(a) Left side of instrument



(b) Beneath instrument, front left

FIGURE 6/4D/309 – 13



(a) Model BC-4000S – Bench Version



(b) Model BC-4000E – Bench Version

FIGURE 6/4D/309 – 14



Latch on left side of instrument is sealed using a lead and wire (or similar) type seal.

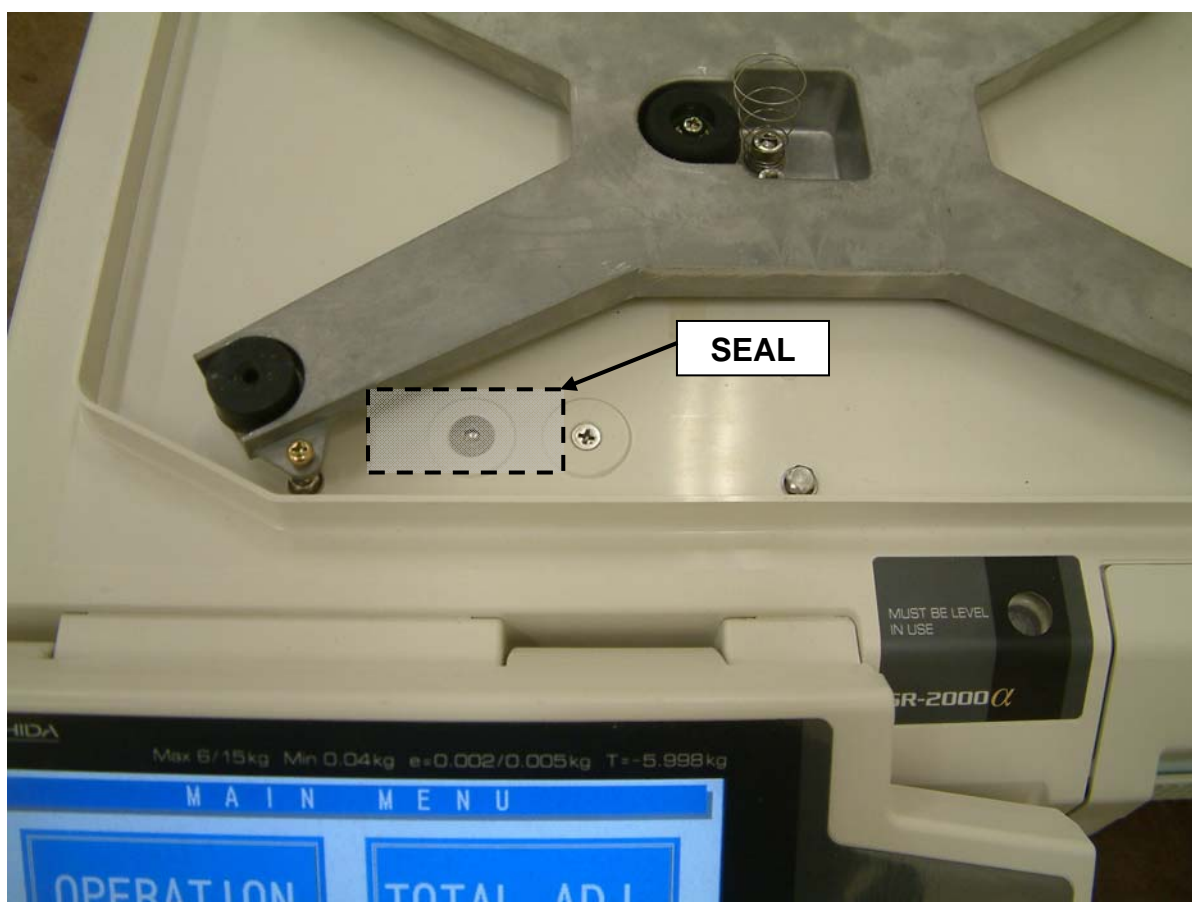
Model BC-4000L2H Including Typical Sealing Arrangements

FIGURE 6/4D/309 – 15



Ishida Model SR-2000α Weighing Instrument

FIGURE 6/4D/309 – 16

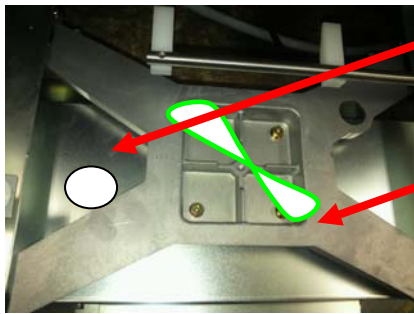


Sealing Arrangements – Model SR-2000α

FIGURE 6/4D/309 – 17

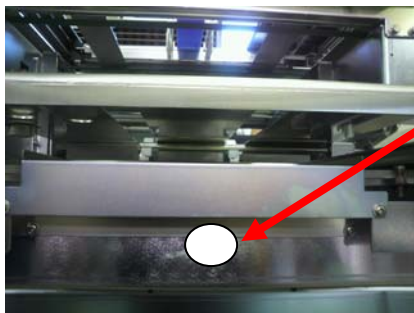


(a) Ishida Model WM-NANO Weighing Instrument



Sealing for access hole of the memory switch. This is mandatory.

Wire sealing to prevent the case from opening.



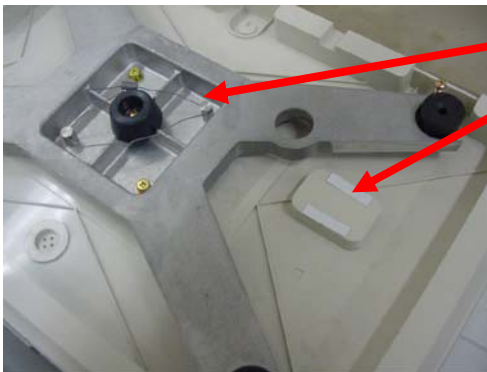
Alternate case sealing.

(b) Typical Sealing of Ishida Model WM-NANO Weighing Instrument

FIGURE 6/4D/309 – 18



(a) Ishida Model UNI-7 Type RP Weighing Instrument



Alternative securing of the memory switch and platter opening for UNI-7 type RP



Securing of the memory switch and platter opening for UNI-7 type RP, scale unit

(b) Typical Sealing of Ishida Model UNI-7 Type RP Weighing Instrument