Australian Government
Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/4C/327

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.

Shinko Denshi Model HJ17K0.1S Weighing Instrument

submitted by W W Wedderburn Pty Limited
101 Williamson Road
Ingleburn NSW 2565

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 October 2015.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 2 approved – certificate issued	27/11/23

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4C/327' 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 Certificate of Approval 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*.

Darryl Hines
Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 6/4C/327

1. Description of Pattern approved on 27/11/23

The Shinko Denshi model HJ17K0.1S high accuracy class Ⅱ weighing instrument, (Figure 1a and Table 1) of 17000 g maximum capacity with a verification scale interval of 1 g and with a minimum capacity of 25 g. Instruments may also be known as Shinko Denshi VIBRA (or VIBRA) HJ17K0.1S of the same model.

The instrument is fitted with differentiated scale interval (d) of 0.1 g. The resolution of differentiated scale interval may be adjusted to display 0.2 g or 0.5 g.

The Instrument uses a 'tuning-fork' technology and has an LCD display for display of the weight value.

The instrument is approved for use within a temperature range of +5 °C to +35 °C, and is so marked.

Instruments are not for trading direct with the public and are so marked.

The instrument may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

The instrument has an optional pole mount version (Figure 1b).

1.1 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.

A zero-tracking device may also operate to automatically correct to within ±0.5*d* (or ±0.25*e* when tared and net displayed) whenever the instrument comes to rest with the display indicating zero (including net zero).

1.2 Differentiated Scale Division

Instruments have an auxiliary indicating device (a differentiated scale division (digit) which is in the dashed bracket (Figure 2)) with a value as shown in the 'Scale Interval (d)' column of Tables 1 and 2.

Scale intervals other than verification scale interval are not approved for trade use.

The differentiated scale division shall only be used for a weight value to be rounded to the nearest verification scale interval or determination of the zero position.

1.3 Tare

A semi-automatic subtractive tare device up to maximum capacity may be fitted.

A pre-set tare device up to maximum capacity may be fitted.

1.4 Alternative Units

Use of units other than kilograms (kg) or grams (g) or carat (ct) is not approved for trade use. Alternative unit is carats.

1.5 Power Supply

Power may be supplied by the 100 – 240 V AC 50/60 Hz AC/DC mains adaptor, with 12 V DC output or 6 V DC internal battery.

Note: The AC/DC mains adaptor supplied for the instrument was an ENG model 6A-121WP12 (12 V DC, 1.0 A) mains adaptor – the submittor should be consulted regarding the acceptability of alternative power supply units.

1.6 Display Check

A display check is initiated when the instruments are switched on.

1.7 Levelling

The instrument is provided with adjustable feet and a level indicator.

The instrument is to be used in a level condition as indicated by the level indicator.

1.8 Interface

Instruments may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with Supplementary Certificate No of Approval S1/0B (in particular in regard to the data and its format).

Instruments may be fitted with the following interfaces:

- RS232C;
- RS422;
- Relay I/O;
- Serial output.

1.9 Additional Features

The instrument may be fitted with certain additional functions such as counting, percentage calculation, multiplied by coefficient and comparator. The additional functions (other than the indications of measured mass, i.e. gross, tare, net, totals, displayed either on the indicator or on an auxiliary or peripheral device) are not approved for trade use.

1.10 Verification Provision

Provision is made for the application of a verification mark.

1.11 Descriptive Markings and Notices

The instrument model number is shown on the instrument nameplate. Instruments carry the following markings:

Manufacturer's mark, or name written in full	SHINKO DENSHI CO., LTD
Name or mark of manufacturer's agent	W.W. WEDDERBURN PTY. LIMITED
Indication of accuracy class	(II)
Pattern approval number for the instrument	NMI 6/4C/327
Maximum capacity	*Max* ..... kg or g or ct #
Minimum capacity	*Min* ..... kg or g or ct #
Verification scale interval	*e =..... kg or* g or ct #
Actual scale interval	*d =..... kg or* g or ct#
Serial number of the instrument	.....

Special temperature limits +5 °C to +35 °C

#1 These markings are shown near the display of the result.

In addition, instruments shall carry a notice stating NOT FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

1.12 Software

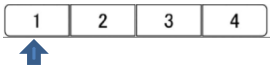
The software is identified by a checksum number 5E6A.

The software checksum number appears during the initial checking when the power is first applied to the instrument.

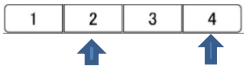
1.13 Sealing Provision

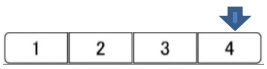
Provision is made for the calibration to be sealed by setting a switch on the main board within the indicator to a LOCK position.

It is possible to determine that the switch status is in the 'LOCK' position by pressing the "Menu" 

key and then key 1 

to increment the numeric value to 6.

To enter the next value, pressing key 4 once. Furthermore, pressing key 2 

will decrement the numeric value to 63 and finally pressing key 4 

to enter the next value. At this stage, the screen is locked at performance code 632, '632 EX SPAN TEST' is displayed. It will not change by pressing key 1 or key 2.

If the switch is in the 'LOCK' position, the instrument will only display '632 EX SPAN TEST'. In this case the instrument may be verified.

Otherwise, the instrument will display all available performance codes between 631 to 638. If '631 EX CAL' is displayed, in which case the instrument should not be verified until the switch has been correctly located in the 'LOCK' position.

To return to weighing mode, press the "Menu" key 

once more.

If switch position is changed, the instrument has to be completely powered off (removed from power) and then powered back on again to activate the change (Locked to Unlocked or Unlocked to Locked).

Note: Navigation through the Menu screens can be done in a number of ways; the above process is just the shortest way this can be achieved.

Sealing to prevent access within the indicator housing may be achieved by using destructible labels placed over the span switch access hole and a join in the indicator housing. Additional sealing is also applied to the eccentricity adjuster cover and the weighing unit cover on the base work (Figure 3).

2. Description of Variant 1 approved on 27/11/23

Certain other capacities of the Shinko Denshi model HJK series of class II instruments as listed in Table 1 below (the pattern is shown in **bold**).

In each case the subtractive taring device operates up to the maximum capacity of the instrument.

TABLE 1

HJK Model	Maximum Capacity (*Max*)	Minimum Capacity (*Min*)	Verification Scale Interval (*e*)	Scale Interval (*d*)	Platter (mm x mm)
HJ17K0.1S	**17 kg**	**25 g**	**1 g**	**0.1/0.2/0.5 g (#)**	**400 x 350**
HJ22K0.1S	22 kg	25 g	1 g	0.1/0.2/0.5 g (#)	400 x 350
HJ33K0.1S	33 kg	25 g	1 g	0.1/0.2/0.5 g (#)	400 x 350
HJ62K0.1DS	62 kg	5 g	1 g	0.1 / 1 g (*)	400 x 350

(#) The resolution of differentiated scale interval (*d*) may be adjusted by user to display 1/10 *e*, 1/5 *e* or 1/2 *e.*

(*) The HJ62K0.1DS model displays a differentiated scale interval of 0.1 g from 0 g to 6200.9 g and a non-differentiated scale interval of 1 g above 6200.9 g without differentiated display.

3. Description of Variant 2

The Shinko Denshi model HJK series of high accuracy class II instrument models which are similar to the pattern and variant 1 but in models as listed in Table 2 below showing they are fitted with an internal calibration function.

TABLE 2

HJK Model	Maximum Capacity (*Max*)	Minimum Capacity (*Min*)	Verification Scale Interval (*e*)	Scale Interval (*d*)	Platter (mm x mm)
HJ17K0.1SR	17 kg	25 g	1 g	0.1/0.2/0.5 g (#)	400 x 350
HJ22K0.1SR	22 kg	25 g	1 g	0.1/0.2/0.5 g (#)	400 x 350
HJ33K0.1SR	33 kg	25 g	1 g	0.1/0.2/0.5 g (#)	400 x 350
HJ62K0.1DSR	62 kg	5 g	1 g	0.1 / 1 g (*)	400 x 350

(#) The resolution of differentiated scale interval (d) may be adjusted by user to display 1/10 e, 1/5 e or 1/2 e.

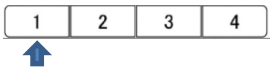
(*) The HJ62K0.1DSR model displays a differentiated scale interval of 0.1 g from 0 g to 6200.9 g and a non-differentiated scale interval of 1 g above 6200.9 g without differentiated display.

Note: For internal calibration function to operate correctly via the scale function ‘633 INT CAL’, the internal mass and associated weighing instrument circuitry needs to be adjusted via the function ‘636 REF CAL’ using suitable reference standards of measurement (weights). This should be done at time of setting up the weighing instrument and on later adjustments and this correct operation should be confirmed at the time of verification.

3.1 Sealing Provision – Internal Calibration models

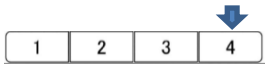
The sealing is the same as stated in clause 1.13 Sealing Provision with the exception that performance codes '633 INT CAL' and '634 INT SPAN TEST' are also available.

It is possible to determine that the switch status is in the 'LOCK' position by pressing the "Menu" 

key and then key 1 

to increment the numeric value to 6.

To enter the next value, pressing key 4 once. Furthermore, pressing key 2 

will decrement the numeric value to 63 and finally pressing key 4 

to enter the next value. At this stage, the screen will show the performance codes. Pressing key 1 or key 2 will toggle between these performance codes.

If the switch is in the 'LOCK' position, the instrument will only display 3 performance codes '632 EX SPAN TEST' or 633 INT CAL or 634 INT SPAN TEST. In this case the instrument may be verified.

Otherwise, the instrument will display all of the 631 to 638 performance codes and the instrument is unlocked. If '631 EX CAL' is displayed, in which case the instrument should not be verified until the switch has been correctly located in the 'LOCK' position.

To return to weighing mode, press the "Menu" key 

once more.

If the switch position is changed, the instrument has to be completely powered off (removed from power) and then powered back on again to activate the change (Locked to Unlocked or Unlocked to Locked).

Performance functions available in the 'LOCK' position are:

- **632 EX SPAN TEST** – A test with external weight to provide a result of difference between a suitable external load and the balance performance. The difference is displayed on screen. No adjustment is made. This test allows user to detect if reverification is required. Reference HJK series Operators Manual.
- **633 INT CAL** – Use of the internal weight (no external load required) to span adjust the weighing instrument back to the weighing instrument set internal weight value. This internal weight value can only be changed when function 636 REF CAL is available. Reference HJK series Operators Manual.
- **634 INT SPAN TEST** – A test with the internal weight to provide a result of difference between the external weight and the balance performance. No adjustment is made. This test allows the user to correct if difference is detected. Reference HJK series Operators Manual.

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*.

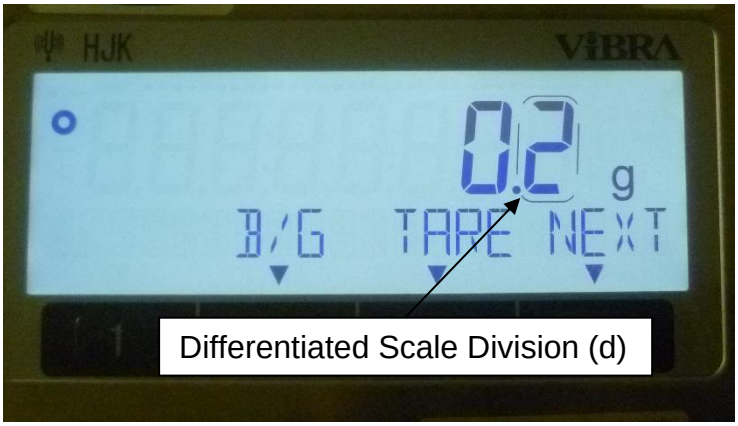
Ensure that instruments are only being used within the special temperature limits stated elsewhere in this Technical Schedule.

FIGURE 6/4C/327 – 1

(a) Shinko Denshi Vibra HJK Series Weighing Instrument (Bench top version)

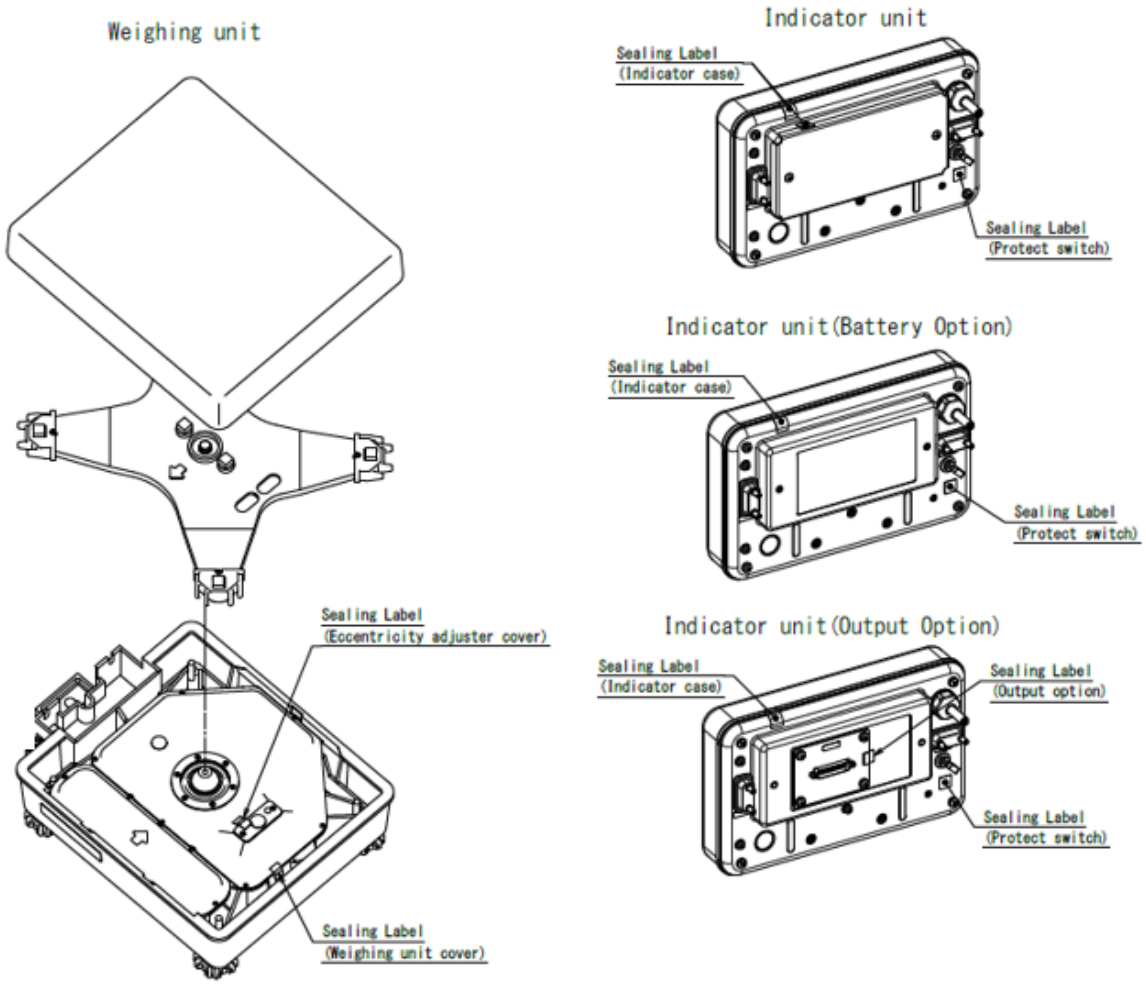
(b) Shinko Denshi Vibra HJK Series Weighing Instrument
(Pole Mount Display version)

FIGURE 6/4C/327 – 2



Differentiated Scale Division

FIGURE 6/4C/327 – 3



Typical Sealing Arrangement Using Destructible Adhesive Labels

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