



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Supplementary Certificate of Approval NMI S733

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.

Nuweigh Model J-1600 Digital Indicator

submitted by Newcastle Weighing Services Pty Ltd
104-114 Hannell Street
WICKHAM NSW 2293

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 becomes subject to review on **1/04/22**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 and 2 approved – certificate issued	21/03/17

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S733' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S733' in addition to the approval number of the instrument, 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 Certificate No S1/0B.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to an instrument incorporating the pattern approved herein shall be within the limits specified herein and in any approval documentation for the other components.

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 S733

1. Description of Pattern

approved on 21/03/17

A Nuweigh model J-1600 digital mass indicator (Figure 1 and Table 1) which may be configured to form part of:

- A class III weighing instrument with a single weighing range of up to 6000 verification scale intervals; or
- A class IIII weighing instrument with a single weighing range of up to 1000 verification scale intervals; or
- A class III multi-interval weighing instrument with up to two partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 3000 verification scale intervals per partial weighing range; or
- A class IIII multi-interval weighing instrument with up to two partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 1000 verification scale intervals per partial weighing range; or
- A class III multiple range weighing instrument with up to two weighing ranges, in which case it is approved for use with up to 3000 verification scale intervals per weighing range; or
- A class IIII multiple range weighing instrument with up to two weighing ranges, in which case it is approved for use with up to 1000 verification scale intervals per weighing range.

The changeover between weighing ranges is automatic.

The instrument has an ABS enclosure with a LCD display for display of the weight value.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause 1.5 below).

TABLE 1 – Specifications

Maximum number of verification scale intervals	6000 (class III) 1000 (class IIII)
Minimum sensitivity	1 μV / scale interval
Excitation voltage	5 V DC
Maximum excitation current	57.5 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cell impedance	87 Ω
Maximum load cell impedance	1600 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	20 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Maximum value of load cell cable length per wire cross section	572 m/mm ² (6-wire)
Load cell connection	4-wire or 6-wire shielded

This approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

1.1 Zero Setting

A zero-tracking device may be fitted.

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 taring device of up to the maximum capacity of the instrument may be fitted.

1.3 Power Supply

Power may be supplied by either a 12 V AC/DC mains adaptor or with an internal rechargeable 9 V DC sealed lead-acid battery.

Note: The AC/DC mains adaptor supplied was model YS01-120050A power supply (output 12 V DC, 500 mA) – the submitter should be consulted regarding the acceptability of alternative power supply units.

1.4 Display Check

A display check is initiated whenever power is applied.

1.5 Interfaces

The indicator 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 NMI General Supplementary Certificate No S1/0B (in particular in regard to the data and its format).

Indications 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 for trade use.

Instruments may be fitted with RS-232 serial data interface.

1.6 Additional Features

The indicator may have additional checking-weighing (HI/OK/LO), peak hold, accumulation, and counting functions. The additional functions (other than the indications of measured mass, i.e. gross, tare, net, displayed either on the indicator or on an auxiliary or peripheral device) are not approved for trade use.



Instruments may also be fitted with 'animal weighing' function. This function shall not be used for trade use.

1.7 Verification Provision

Provision is made for the application of a verification mark.

1.8 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Nuweigh	
Indication of accuracy class	 or 	
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
Serial number of the instrument	.....
Pattern approval mark for the indicator	NMI S733	
Pattern approval mark for other components	.....	#3

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

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

#3 May be located separately from the other markings.

In addition, instruments not greater than 100 kg capacity carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

Notes:

- (i) For multi-interval instruments the markings shall be as above, with the exception that the 'Maximum capacity' and 'Verification scale interval' shall be marked for both interval ranges, e.g. as follows:

Maximum capacity	<i>Max</i>	kg
Verification scale interval	<i>e</i> =	kg

- (ii) For multiple range instruments, the maximum capacity, minimum capacity and verification scale interval for each range shall be marked, with an indication of the range to which they apply, e.g.

Range (*)	Range1		Range2
<i>Max</i> ₁	.... kg	<i>Max</i> ₂	.... kg
<i>Min</i> ₁	.... kg	<i>Min</i> ₂	.... kg
<i>e</i> ₁ =	.... kg	<i>e</i> ₂ =	.... kg

1.9 Sealing Provision

The calibration and configuration parameters are protected when a 'F2' link located on the main circuit board within the indicator housing, is set to OPEN, or by means of a destructible adhesive label placed over an ABS slice covering an access hole to the calibration switch.

The indicator is sealed by preventing access within the indicator housing. This may be achieved by applying a destructible adhesive label over the accessing hole to the screw in the indicator housing shown in Figure 1.

1.10 Software

The software is designated 1.29 b.

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

2. Description of Variant 1 **approved on 21/03/17**

The indicator may be in one of the ABS enclosures and having either a LCD display or LED display shown in Figure 2.

Provision is made for the housing to be sealed after verification.

Sealing is as described for the pattern. The housing is secured by a lead and wire (or similar) type seals with drilled screws, or by destructible adhesive labels, to prevent the opening of the housing shown in Figure 2.

3. Description of Variant 2 **approved on 21/03/17**

The indicator may be in one of the stainless steel enclosures with a LCD display shown in Figure 3.

Provision is made for the housing to be sealed after verification.

Sealing is as described for the pattern. The housing is secured by a lead and wire (or similar) type seals with drilled screws, or by destructible adhesive labels, to prevent the opening of the housing shown in Figure 3.

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 Schedule 1 of the *National Trade Measurement Regulations 2009*.

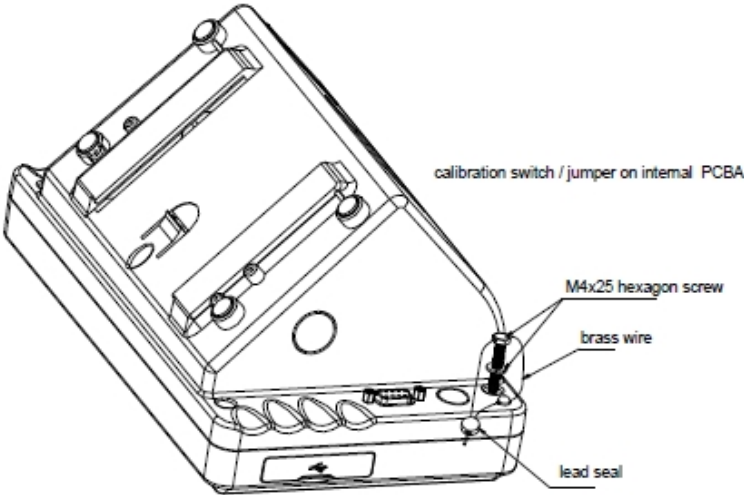
For multi-interval and multiple range instruments with verification scale intervals of $e_1, e_2 \dots$, apply e_1 for zero adjustment, and maximum permissible errors apply $e_1, e_2 \dots$, as applicable for the load.

FIGURE S733 – 1

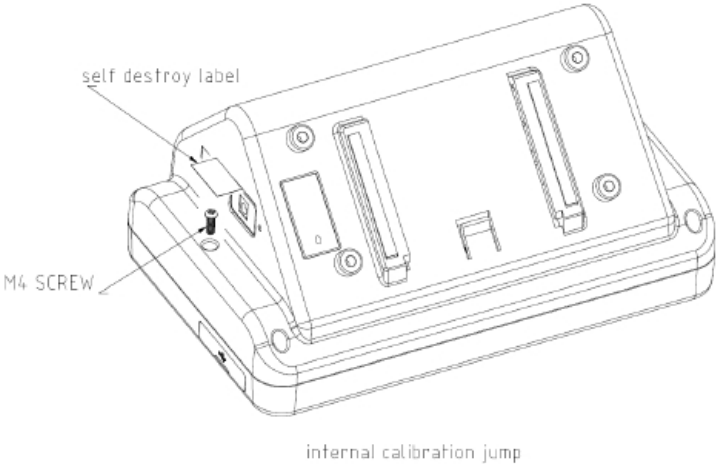


Nuweigh Model J-1600 Digital Indicator incl. Typical Sealing (The pattern)

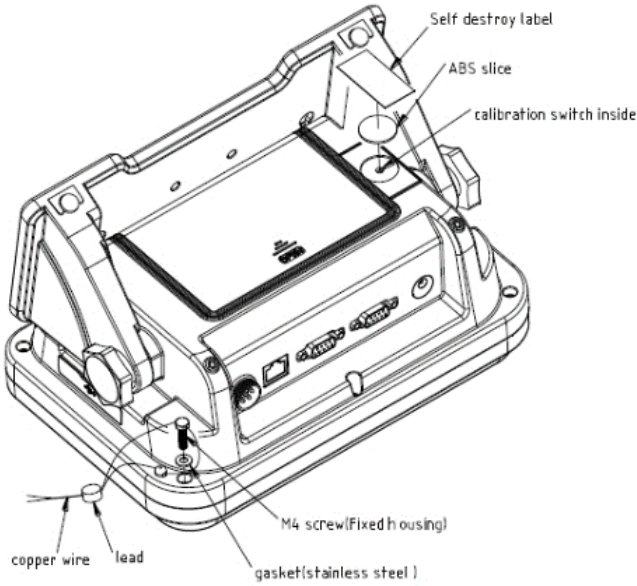
FIGURE S733 – 2



(a)



(b)



(c)



(d)



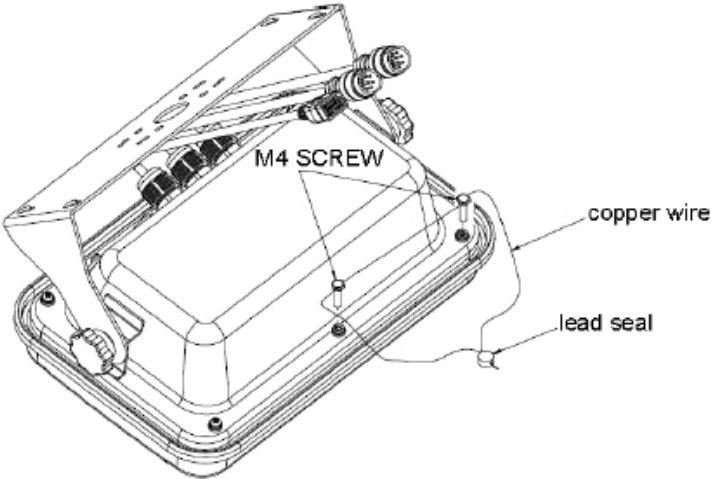
(e)



(f)

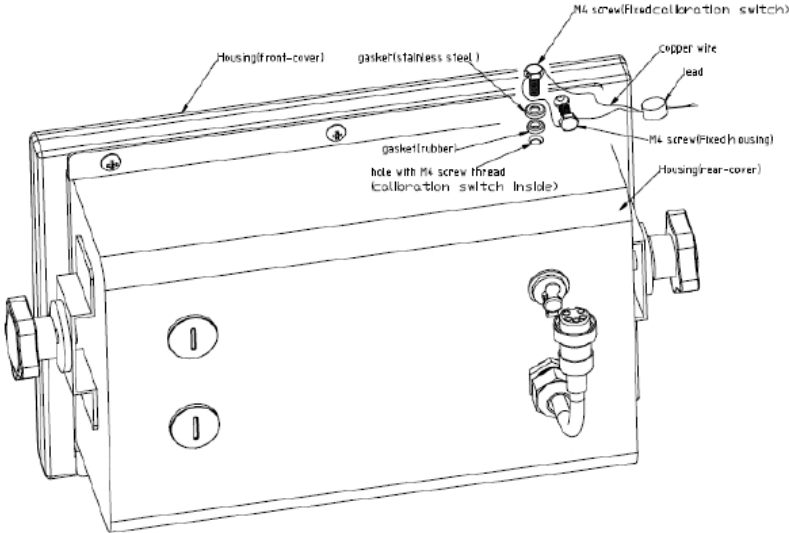
Nuweigh Model J-1600 Digital Indicator in ABS Enclosure incl. Typical Sealing (Variant 1)

FIGURE S733 – 3

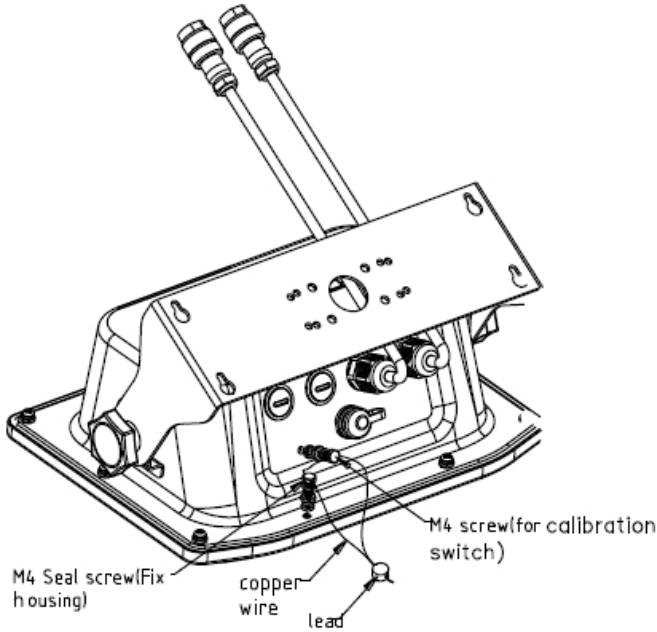


internal calibration jump

(a)



(b)



(c)

Nuweigh Model J-1600 Digital Indicator in Stainless Steel Enclosure incl. Typical Sealing (Variant 2)

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