Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/9C/307

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.

Gedge Systems Model Longneck-60 Weighing Instrument

submitted by Gedge Systems Pty Ltd
27 Rhur Street
Dandenong South VIC 3175

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 1/06/16, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – interim certificate issued	12/05/11
1	Variant 2 approved – pattern & variants 1 & 2 – certificate issued	8/09/11
2	Variant 3 approved – certificate issued	28/11/12

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/9C/307' 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.

The use of substitute approved load cells (i.e. through the application of General Certificate of Approval No 6B/0) is not approved.

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 6/9C/307

1. Description of Pattern approved on 12/05/11

A Gedge Systems model Longneck-60 class (III) single interval self-indicating non-automatic weighing instrument (Table 1 and Figure 1) with a maximum capacity of 60 kg and a verification scale interval of 0.02 kg. May also be known as 'Rite-Weigh' instruments of the same model.

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

Instruments operate using version V1.07 software.

1.1 Basework

The basework (Figure 2a) has the load receptor directly supported by a single load cell. The load receptor has maximum nominal dimensions of 420 mm × 520 mm.

1.2 Load Cell

A ZEMIC model L6G (double bending beam) load cell of 100 kg maximum capacity is used (Figure 2b).

1.3 Indicator

A Gedge Systems model GSVW digital indicator (Figures 1 and 3) is used. The indicator may be mounted on a column attached to the basework.

1.3.1 Zero

Zero is automatically corrected to within ±0.25e whenever the instrument comes to rest within 0.5e of zero.

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.

The instrument has an initial zero-setting device with a nominal range of not more than 20% of the maximum capacity of the instrument.

1.3.2 Tare

A semi-automatic subtractive taring device of up to the maximum capacity of the instrument may be fitted.

1.3.3 Power Supply

Power supply may be either:

- 12 V DC supplied by an AC/DC mains adaptor, e.g. Shenzhen Yunsheng Plastic Cement & Electronics Co. model YS01-120050A, 240 V AC/50 Hz input, 12 V DC/500 mA output – the submittor should be consulted regarding the acceptability of alternative power supply units; or
- batteries (6 V DC, rechargeable).

1.3.4 Display Check

A display check is initiated whenever power is applied.

1.3.5 Additional Features

The indicator also has certain additional functions (e.g. checkweighing, accumulation) which can be assigned to a function key of the indicator. These additional functions (other than the indications of measured mass, i.e. gross, tare, net), are not approved for trade use.

1.3.6 Interfaces

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

Auxiliary devices (such as a computer and printer) used with this instrument shall comply with the requirements of NMI R76-1 and General Supplementary Certificates No S1/0/A or No S1/0B

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 Sealing Provision

The calibration adjustments are protected by calibration button (as shown in Figure 3).

After calibration, assemble the calibration button cover (supplied by manufacturer) on the hole, and then apply with the destructible label/sticker as shown in Figure 3.

1.6 Descriptive Markings and Notices

Manufacturer's mark, or name written in full	Gedge Systems	
Indication of accuracy class	(III)	
Maximum capacity	*Max* ..... kg	#1
Minimum capacity	*Min* ..... kg	#1
Verification scale interval	*e* = ... kg	#1
Maximum subtractive tare	*T* = - ..... kg	#2
Serial number of the instrument	.....	
Pattern approval mark for the instrument	NMI 6/9C/307	

#1 These markings shall also be 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*.

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

1.7 Verification Provision

Provision is made for a verification mark to be applied.

2. Description of Variant 1 approved on 12/05/11

Certain other models/capacities of the Longneck series with characteristics as listed below in Table 1.

TABLE 1

Model	**Longneck-60** (*)	Longneck-150	Longneck-300
Maximum capacity (*Max*)	60 kg	150 kg	300 kg
Minimum capacity (*Min*)	0.4 kg	1 kg	2 kg
Scale interval (*e*)	0.02 kg	0.05 kg	0.1 kg
Number of scale intervals (*n*)	3000		
Temperature range	–10°C to +40°C		
Platform size	420 mm × 520 mm		
Load cell	ZEMIC model L6G		
Emax	100 kg	200 kg	500 kg
Number of load cells	1	1	1
Minimum value of verification scale interval for basework (*Vmin* of load cell)	0.02 kg	0.05 kg	0.1 kg
Load cell sensitivity (at *Emax*)	2 mV/V		
Input impedance	406 Ω		
Excitation voltage (maximum)	18 Volt		
Cable length	1600 mm		
Number of leads	6 wires + shield		

(*) The **pattern**, model Longneck-60.

3. Description of Variant 2 approved on 8/09/11

The baseworks of this approval can be used with a compatible approved (by Supplementary Certificate) indicator to form a non-automatic weighing instrument, provided the conditions set out below are met.

The approved basework and its limiting characteristics are given in Variant 1.

The conditions to be met are:

- The excitation voltage used is within the range approved for the basework.
- The maximum load applied to the basework (live load plus any dead load) does not exceed the load cell maximum capacity.
- The verification scale interval of the weighing instrument is the same as the value specified for the pattern and variant 1 (Table 1).
- The number of verification scale intervals of the weighing instrument is less than or equal to 3000.

- The signal voltage per verification scale interval is no less than the minimum sensitivity value per verification scale interval for the indicator (as specified in the approval documentation for the indicator), i.e.

  Indicator Sensitivity $\leq 1000 \times E_x \times LC\_Sens \times e / E_{max}$

  where E_x = Excitation from indicator (V)

  LC_Sens = Load cell sensitivity (mV/V)

  E_{max} = Load cell maximum capacity (nominal) (kg)

  e = verification scale interval of the instrument (kg)

  Indicator Sensitivity = Minimum sensitivity value per verification scale interval for the indicator (μV)

4. Description of Variant 3 approved on 28/11/12

The Riteweigh model Longneck–60 SS (60 kg maximum capacity) and model Longneck–150 SS (150 kg maximum capacity) are the same as the pattern and variant 1, except for the following:

- These versions have a stainless steel enclosure (as shown in Figure 4);
- The software version is V1.08 (instead of version 1.07); and
- The calibration is protected by the jumper on the main circuit board, and the sealing of the calibration can be either by sealing wire on the screws or by applying destructible sealing label over the edge of the enclosure (as shown in Figure 5).

TEST PROCEDURE No 6/9C/307

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

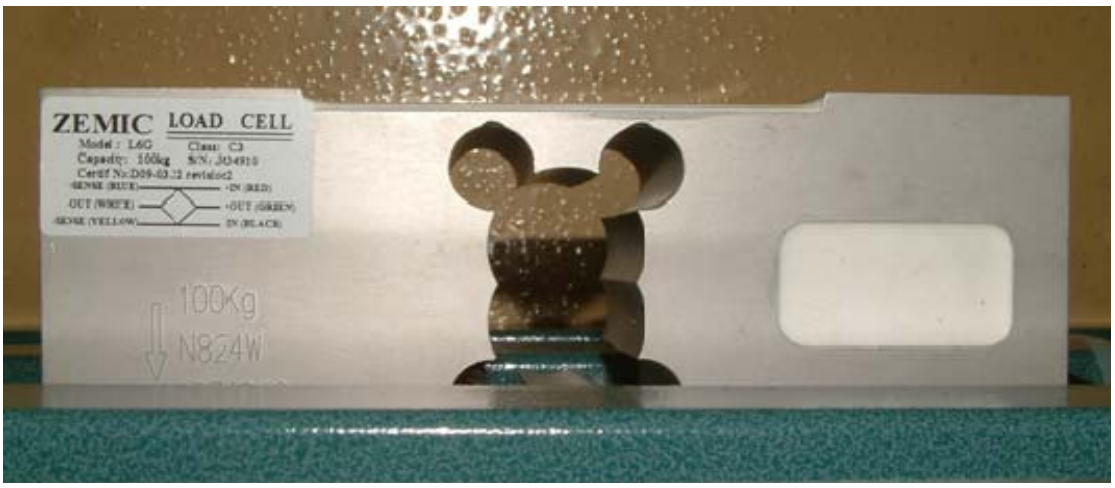
The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE 6/9C/307 – 1

Gedge Systems Model Longneck-60 Weighing Instrument

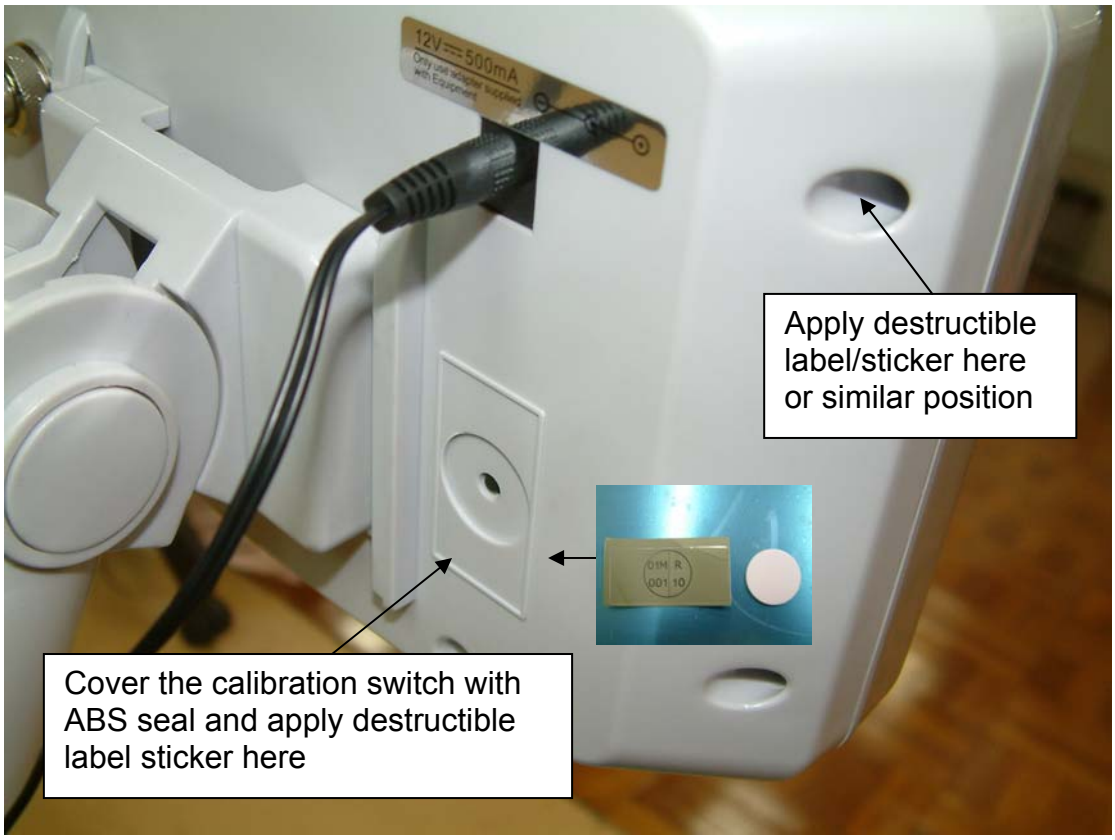
FIGURE 6/9C/307 – 2

(a) Gedge Systems Model BW-1N (Longneck-60) basework (platter removed)



(b) ZEMIC Model L6G Load Cell

FIGURE 6/9C/307 – 3

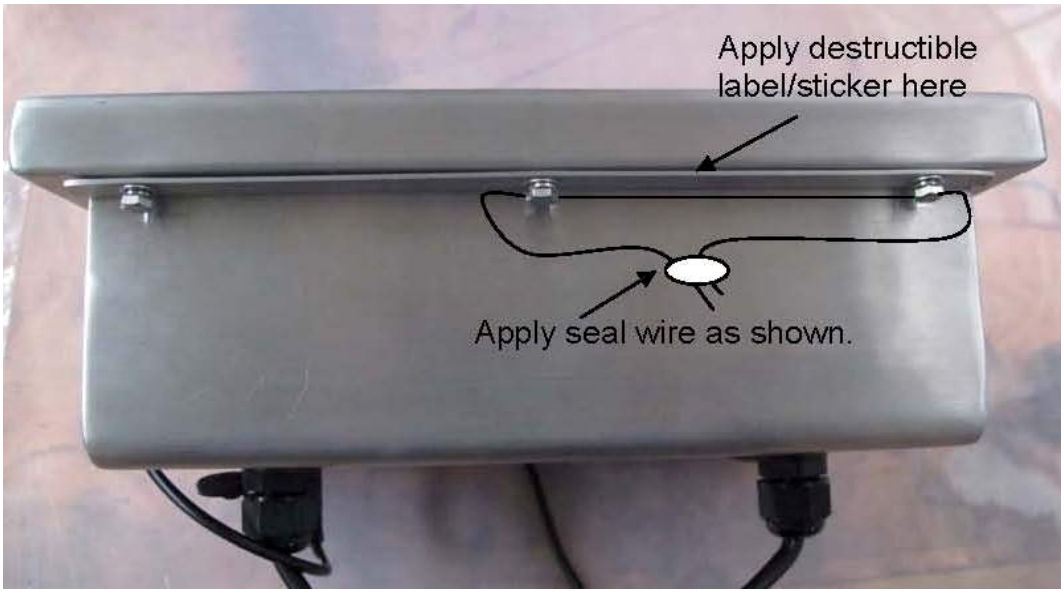


Typical Sealing Arrangements

FIGURE 6/9C/307 – 4

Gedge Systems Model GSVW Iindicator in a Stainless Steel Housing – Variant 3

FIGURE 6/9C/307 – 5



Typical Alternative Sealing Methods

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