Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

Certificate of Approval

NMI 6/9C/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 instruments herein described.

Adam Equipment Model GFK 60M Weighing Instrument

submitted by Adam Equipment (S.E. Asia) Pty Ltd
Unit 2/71 Tacoma Circuit
Canning Vale WA 6155

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 **1/06/21**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – certificate issued	12/05/11
1	Variant 2 approved – certificate issued	13/12/13
1	Pattern & variants 1 & 2 updated & **reviewed** – variants 3 & 4 approved – certificate issued	28/06/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/9C/309' 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 their powers under Regulation 60 of the *National Measurement Regulations 1999*.

Dr A Rawlinson

TECHNICAL SCHEDULE No 6/9C/309

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

An Adam Equipment model GFK 60M class (III) self-indicating single interval non-automatic weighing instrument (Figure 1) of 60 kg maximum capacity with a verification scale interval of 0.02 kg.

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

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 400 mm × 500 mm.

1.2 Load Cell

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

1.3 Indicator

An Adam Equipment model GK M 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:

- mains supply (230 V AC, 50/60 Hz); or
- battery (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 a level indicator.

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

After calibration, the indicator enclosure and basework output connector are sealed with wire seal or destructible label/sticker as shown in Figure 3, or similar method.

1.7 Descriptive Markings and Notices

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's mark, or name written in full	Adam Equipment Pty Ltd
Indication of accuracy class	(III)
Pattern approval number for the instrument	NMI 6/9C/309
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	…….

#1 These markings are also 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.

2. Description of Variant 1 approved on 13/12/13

Certain other capacities of the GFK series with characteristics as listed below in Table 1.

3. Description of Variant 2 approved on 13/12/13

Certain models and capacities of the GBK series (Figures 4 and 5) with characteristics as listed below in Table 2. Instruments are similar to the pattern and variant 1 but have a load receptor with maximum nominal dimensions of 300 × 400 mm.

4. Description of Variant 3 approved on 28/06/16

The pattern and variant 1 having a revised basework frame as shown Figure 6.

5. Description of Variant 4 approved on 28/06/16

Variant 2 having a revised basework frame as shown Figure 7.

TEST PROCEDURE No 6/9C/309

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*.

TABLE 1 – Approved models and capacities of the GFK series

Model	**GFK 60M** (*)	GFK 150M	GFK 300M
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	400 mm × 500 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)	0.0083 kg	0.0163 kg	0.0416 kg
Load cell sensitivity (at *Emax*)	2 mV/V		
Input impedance	409 Ω		
Excitation voltage (maximum)	18 V		
Cable length	1750 mm		
Number of leads	6 wires + shield		

(*) These specifications in **bold** type are of the pattern.

TABLE 2 – Approved models and capacities of the GBK series

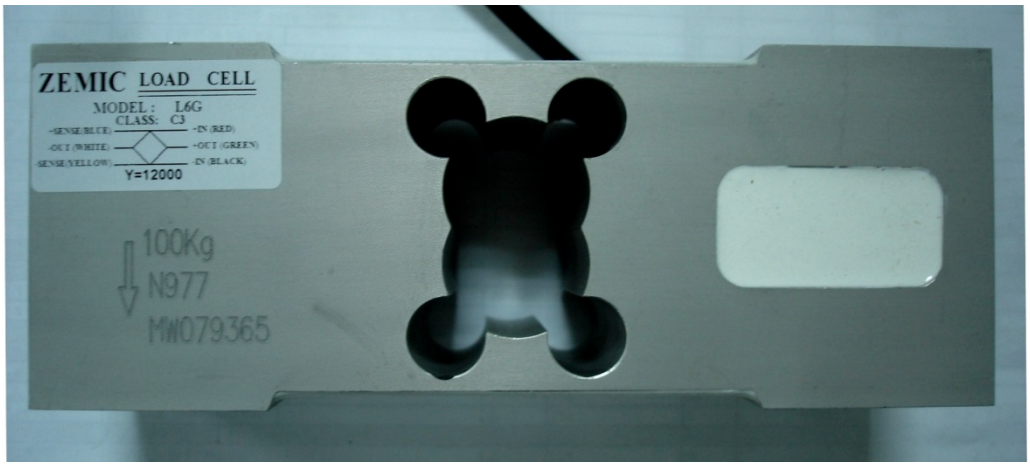
Model	Maximum Capacity (*Max*)	Verification Scale Interval (*e*)	ZEMIC Load Cell Maximum Capacity E_{max}
GBK 6M	6 kg	0.002 kg	L6N-C3-10 kg-3B6
GBK 15M	15 kg	0.005 kg	L6N-C3-30kg-3B6
GBK 30M	30 kg	0.01 kg	L6E-C3-60kg-2B
GBK 60M	60 kg	0.02 kg	L6E-C3-100kg-2B
GBK 150M	150 kg	0.05 kg	L6E-C3-200kg-2B

FIGURE 6/9C/309 – 1

Adam Equipment Model GFK 60M Weighing Instrument - Pattern

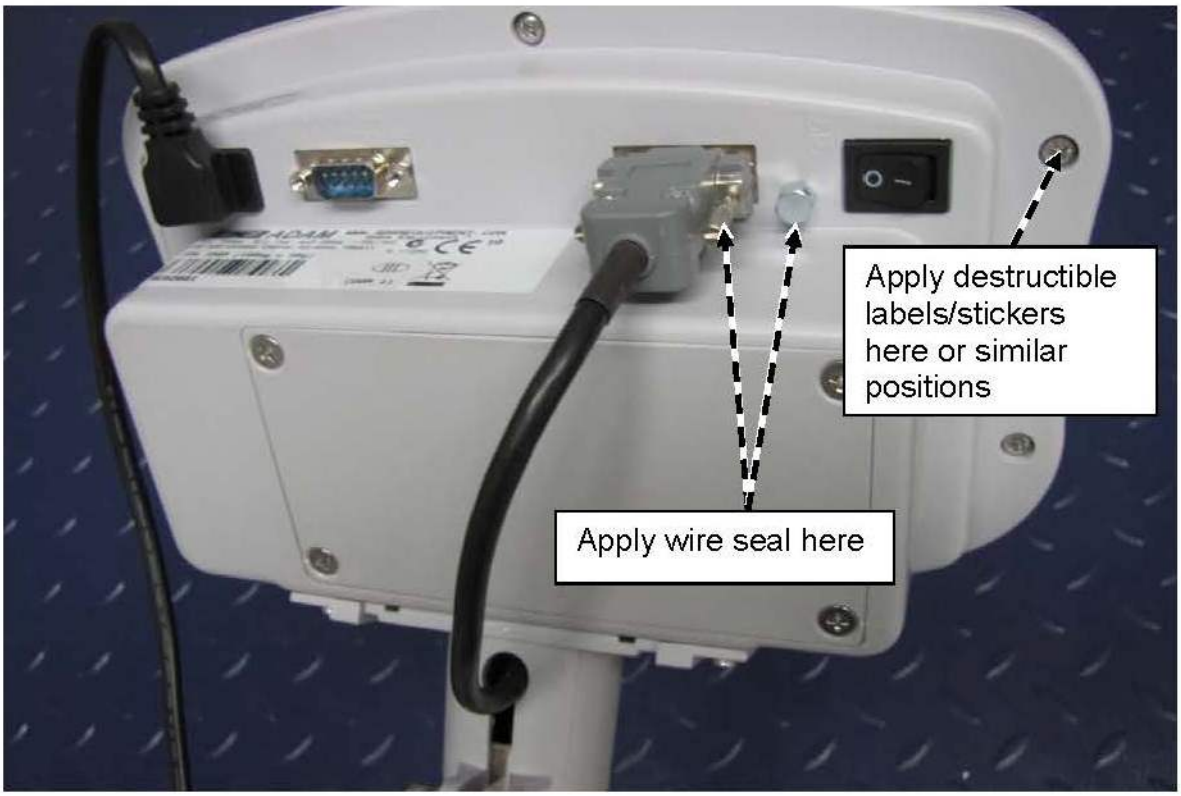
FIGURE 6/9C/309 – 2

(a) Adam Equipment Model GFK 60M Basework (platter removed)



(b) Zemic Model L6G Load Cell

FIGURE 6/9C/309 – 3

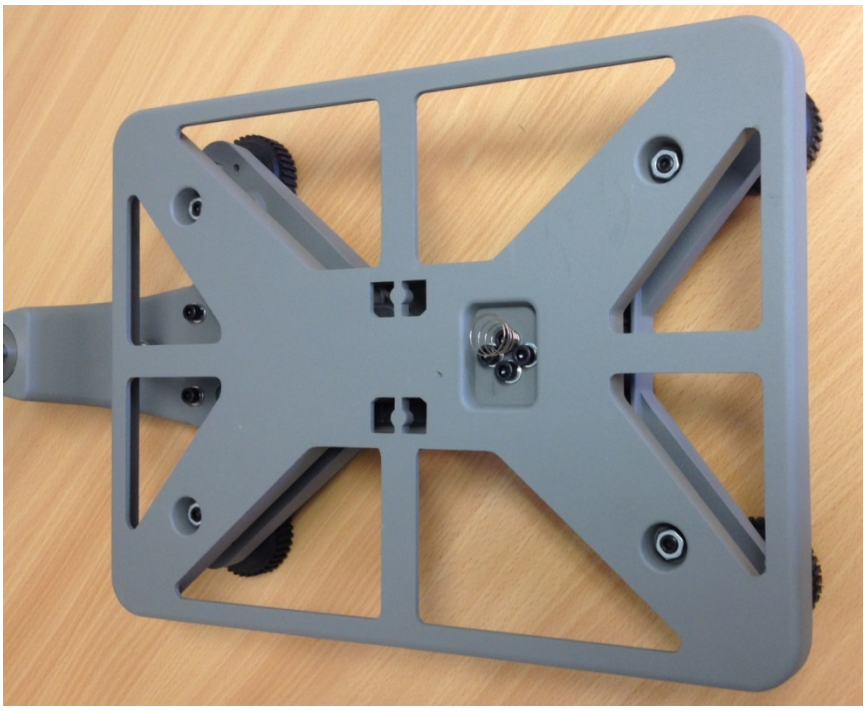


Typical Sealing Arrangements

FIGURE 6/9C/309 – 4

Adam Equipment GBK **M Series Weighing Instrument - Variant 2

FIGURE 6/9C/309 – 5

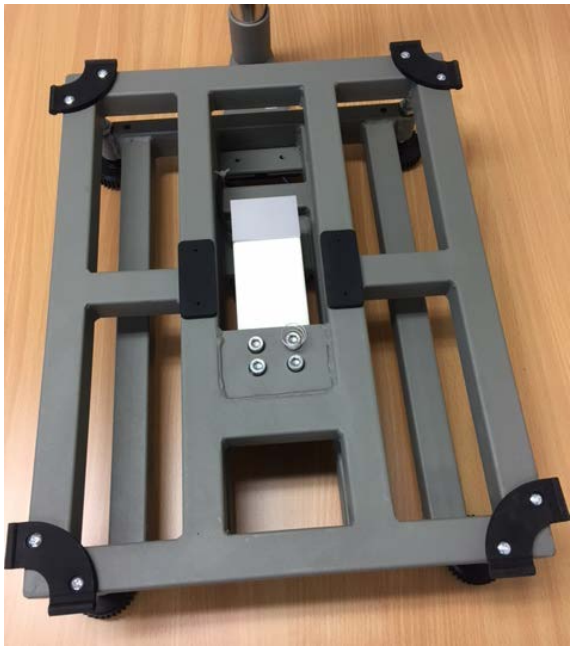


(a) Adam Equipment GBK **M Series Basework (platter removed) – Variant 2

(b) Zemic L6N Series Load Cell

(c) Zemic L6E Series Load Cell

FIGURE 6/9C/309 – 6



GFK **M Series Revised Basework (platter removed) – Variant 3

FIGURE 6/9C/309 – 7

GBK **M Series Revised Basework (platter removed) – Variant 4

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