



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/10B/85

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.

Tri State Weighing Model TS1001 Weighing Instrument

submitted by Tri State Weighing Pty Ltd
3040 Fourteenth Street
Irymple VIC 3498.

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 **1/11/15**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and variants 1 & 2 approved – certificate issued	27/10/10
1	Pattern amended & variant 3 approved – certificate issued	22/01/20

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/10B/85' and only by persons authorised by the submittor.

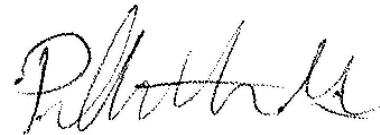
It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this 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 pattern as approved herein or with substitute approved load cells and/or approved indicators, and in other capacities or with different platform sizes, shall comply with General Certificate of Approval No 6B/0.

Note: New instruments manufactured under this approval shall only use load cells and/or indicators with current Supplementary Certificates of Approval.

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



Phillip Mitchell
A/g Manager
Policy and Regulatory
Services

TECHNICAL SCHEDULE No 6/10B/85

1. Description of Pattern

**approved on 27/10/10
amended on 22/01/20**

A Tri State Weighing model TS1001 multiple range self-indicating weighing instrument of having a verification scale interval of 20 kg up to the maximum capacity of the first range of 60 000 kg, and having a verification scale interval of 50 kg up to the maximum capacity of the instrument of 70 000 kg.

1.1 Basework

The model TS1001 basework has the platform fully supported by 10 load cells.

1.2 Load Cells

Ten HBM model C16AC3/30t load cells of 30 000 kg capacity are used. The load cells are also described in the documentation of approval NSC/NMI S370.

1.3 Indicator

A Rinstrum model R420 digital indicator is used.

The indicator is also described in the approval documentation of approval NMI S463.

1.4 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Tri State Weighing Pty Ltd
Indication of accuracy class	Ⓜ
Maximum capacity	<i>Max</i> kg or t (#)
Minimum capacity	<i>Min</i> kg or t (#)
Verification scale interval	<i>e</i> = kg or t (#)
Serial number of the instrument
Pattern approval mark for the instrument	NMI 6/10B/85
Pattern approval mark for the load cells	NMI S...
Pattern approval mark for the indicator	NMI S...

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

In the case of multiple range or multi-interval instrument configurations additional markings relating to additional ranges shall be provided in accordance with the approval documentation of the indicator used.

1.5 Sealing Provision

Provision is made for the calibration adjustments in the indicator to be sealed as described in the approval documentation for the indicator used.

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Weighbridge Requirements

Where the instrument is intended to be installed as a weighbridge, it shall be ensured that all relevant weighbridge requirements of the National Measurement Legislation are met (e.g. in relation to weighbridge approaches, visibility and the location of the weighbridge indicator and platform).

This approval does not certify that such requirements have (or can be) met.

The requirements of the National Measurement Legislation regarding the ground or floor under the platform vary according to whether the instrument is installed as a portable weighbridge, weighbridge without a pit or a weighbridge with a pit. However, bolting of the load cell support pads to suitable concrete piers is considered essential to provide a suitable stable base, irrespective of other aspects of instrument installation.

Note that it is important that suitable provision be made for the loading of test masses. For example, clear access for a forklift may be necessary at both sides of the platform.

2. Description of Variant 1

approved on 27/10/10

Other Tri State Weighing TS1001 series instruments, as single range, multiple range or multi-interval instruments, subject to approval parameters of the load cells and indicator, and compliance with General Certificate of Approval No 6B/0.

The platform is fully supported by no less than 4 and with up to 16 approved load cells. Instruments may be in capacities of:

- 100 kg up to 1499 kg;
- 1500 kg up to 14 999 kg;
- 15 000 kg up to 149 999 kg; and
- 150 000 kg and above,

using approved load cells and an approved digital indicator (in accordance with General Certificate of Approval No 6B/0).

Instruments are approved for use with up to 4000 verification scale intervals (subject to the approval parameters of the load cells and indicator).

Instruments used with more than 3000 verification scale intervals shall be provided with wind protection in accordance with clause **4. Wind Effects** of General Certificate of Approval No 6B/0.

3. Description of Variant 2

approved on 27/10/10

Tri State Weighing TS1001H series instruments, similar to variant 1 above, but which have the load receptor in the form of a hopper, tank or silo fully supported by approved load cells. Instruments may be in capacities of:

- 100 kg up to 1499 kg;
- 1500 kg up to 14 999 kg;
- 15 000 kg up to 149 999 kg; and
- 150 000 kg and above,

using approved load cells and an approved digital indicator (in accordance with General Certificate of Approval No 6B/0).

Instruments are approved for use with up to 4000 verification scale intervals (subject to the approval parameters of the load cells and indicator).

Instruments used with more than 3000 verification scale intervals shall be provided with wind protection in accordance with clause 4. **Wind Effects** of General Certificate of Approval No 6B/0.

Instruments are either:

- (a) fitted with 3, 4 or 5 approved load cells (arranged symmetrically to ensure even loading of each cell) where the hopper is a vertical cylindrical or tank type load receptor directly supported by the load cells; or
- (b) fitted with 4 approved load cells where the hopper is a non-vertical cylindrical, or other hopper-type load receptor.

Note: Instruments with more than the number of load cells mentioned above may be acceptable if prior written agreement from the National Measurement Institute is obtained.

Suitable provision must be made for the application of suitable verified masses to the instrument as required for verification and certification purposes. It may be necessary for such masses to be incorporated within the design of the instrument.

4. Description of Variant 3

approved on 22/01/20

Tri State Weighing model TS1002 series instruments (Figure 1) which are similar to the pattern but which have a steel constructed load receptor (unlike the TS1001 series which has a concrete infill load receptor).

TEST PROCEDURE No 6/10B/85

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 6/10B/85 – 1



Tri State Weighing Model TS1002 Weighing Instrument

~ End of Document ~