



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

No 6/10B/68

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.

CBH Model CS2001 Weighing Instrument

submitted by Co-operative Bulk Handling Limited
30 Delhi Street
West Perth WA 6005.

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 **1/09/17**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and variants 1 & 2 approved – interim certificate issued	17/08/01
1	Pattern and variants 1 & 2 approved – certificate issued	13/11/01
2	Pattern & variants 1 & 2 reviewed – notification of change issued	17/08/07
3	Pattern & variants 1 & 2 reviewed, amended & updated – variants 3 to 5 approved – certificate issued	16/11/12
4	Variants 6 to 7 approved – certificate issued	06/06/19

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) 6/10B/68' 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 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.

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*.



Darryl Hines
Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 6/10B/68

1. Description of Pattern

approved on 17/08/01

A CBH model CS2001 class III non-automatic self-indicating weighing instrument of 50 000 kg maximum capacity and approved for use with up to 2500 verification scale intervals.

1.1 Basework

The model CS2001 basework has the load receptor fully supported by four load cells.

1.2 Load Cells

Four HBM model C16AC3/30t load cells of 30 000 kg capacity are used. The load cells are described in the documentation of approval NSC No S370.

1.3 Indicator

A Ranger model R420 digital indicator is used. The indicator is described in the documentation of approval NMI S463.

1.4 Descriptive Markings

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
Indication of accuracy class	III
Pattern approval number for the instrument	NMI 6/10B/68
Maximum capacity	Max kg or t #
Minimum capacity	Min kg or t #
Verification scale interval	e = kg or t #
Serial number of the instrument

These markings are also shown near the display of the result if they are not already located there.

Note: In the case of 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 to be sealed as described in the approval documentation for the indicator.

1.6 Verification Provision

Provision is made for the application of a verification mark.

2. Description of Variant 1 **approved on 17/08/01**

Other model weighing instruments of the CS2000 series.

The platform is fully supported by no less than 4 and with up to 16 NMI 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 17/08/01**

A number of weighing instruments may be located adjacent to each other, with results added by summing indicator(s) in accordance with General Supplementary Certificate of Certificates No S1/0/A or No S1/0B. Such arrangements may have other model numbers in the CS2000 series.

4. Description of Variant 3 **approved on 16/11/12**

The pattern or variants as multi-interval instruments with up to two partial weighing ranges (each with its own verification scale interval) in which case the instrument is approved for use with up to 3000 verification scale intervals per partial weighing range.

5. Description of Variant 4 **approved on 16/11/12**

The pattern or variants fitted with Flintec model RC30-30t-C3 load cells. The load cells are described in the documentation of approval NSC S368.

6. Description of Variant 5 **approved on 16/11/12**

CBH CS2000 series instruments, similar to variant 1, 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.

7. Description of Variant 6 **approved on 06/06/19**

Model CS2000 series instruments having a deck constructed with pre-fabricated concrete design.

7.1 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.

8. Description of Variant 7 **approved on 06/06/19**

Model CS2000 series instruments using NMI-approved digital load cells with an indicator which is approved for use with compatible digital load cells as described in the approval documentation for the load cell and/or indicator used.

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.

8.1 Arrangements in regard to NMI General Certificate 6B/0

The application of the digital load cells shall be carried out in accordance with NMI General Certificate No 6B/0, with the following exemptions/observations:

(i) NMI 6B/0 clause 6.3 Number of Verification Scale Intervals for the Instrument.

The number of verification scale intervals (VSI) of the indicator is equal to the number of VSI given in the approval documentation for the load cell used.

(ii) NMI 6B/0 clause 6.5 Minimum Sensitivity of the Digital Indicator and clause 6.6 Load Cell Impedance.

The calculations are not applicable to the application of digital load cells.

TEST PROCEDURE No 6/10B/68

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*.

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