



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Certificate of Approval

NMI 6/14B/27

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.

Bühler Model MEAG-DUMP Discontinuous Totalising Automatic Weighing Instrument

submitted by Allied Mills Pty Ltd
330 Picton Road
Picton NSW 2571

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 107, *Discontinuous Totalising Automatic Weighing Instruments (Totalising Hopper Weighers)*, dated July 2004.

This approval becomes subject to review on 1/7/22, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern provisionally approved – interim certificate issued	17/12/15
1	Pattern approved – certificate issued	29/6/17

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/14B/27' and only by persons authorised by the submitter.

Instruments purporting to comply with this approval and currently marked 'NMI P6/14B/27' may be re-marked 'NMI 6/14B/27' but 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.

This approval shall NOT be used in conjunction with General Certificate No 6B/0.

Special

This approval is limited to a single instrument (S/N: 461171) located at:

Allied Mills Pty Ltd
330 Picton Road
Picton NSW 2571

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 6/14B/27

1. Description of Pattern **provisionally approved on 17/12/15**
approved on 29/6/17

An Bühler model MEAG-DUMP MSDT-2400 Class 0.5 discontinuous totalising automatic weighing instrument (DTAWI) having a weigh hopper of 1 800 kg maximum capacity.

The instrument is installed in a permanently fixed location.

Note: This approval has been granted with reference to document NMI R 107, *Discontinuous Totalising Automatic Weighing Instruments (Totalising Hopper Weighers)*, dated July 2004. The following description is intended to introduce terms used in this Certificate and Technical Schedule which may be additional to those in that document but which are consistent with the terminology in the document.

The system aims to provide a *bulk load delivery* using a particular automatic *delivery sequence* (the term 'delivery' may also be taken to refer to 'receipt').

This sequence involves the totalisation of the results of a number of *discrete load deliveries* or *weighing cycles*, each of which involves the division of the bulk product into *discrete loads*, according to a *target discrete load* the mass of which is then determined by weighing to give the *discrete load delivered* following which the product is discharged to the bulk output. Note that the *target discrete load* may be achieved by stopping or slowing the bulk product delivery prior to the *target discrete load* value being reached according to *discrete load target shutoff adjustments* (such as inflight adjustments or slow flow pre-sets).

Each *discrete load delivered* is totalised (at any time this may be termed the *cumulative totalisation*).

The *target discrete load* is generally a pre-selected value that is the same for most of the *discrete load deliveries* (this may be termed the *pre-selected target discrete load*). However for the final one or two deliveries in the *bulk load delivery* the *target discrete load* may differ (for example to avoid excessively large or small *discrete loads*). In addition, arrangements for stopping or slowing the bulk product delivery prior to the *target discrete load* value being reached may vary for the final discrete deliveries in the delivery sequence according to *target totalised load shutoff adjustments* (such as inflight adjustments or slow flow pre-sets).

The *totalised bulk load delivered* may be intended to be close to a requested amount (*target totalised load*) in which case adjustments and pre-sets as described above may be used to achieve this as closely as possible.

Alternatively the *totalised bulk load delivered* may be the quantity measured without a particular target totalised load.

The *totalised bulk load delivered* is the cumulative totalisation (sum of all discrete loads delivered), in the complete *bulk load delivery*. The transaction is based on the *totalised bulk load delivered* (not the *target totalised load*).

1.1 Details

The Bühler model MEAG-DUMP MSDT-2400 Class 0.5 discontinuous totalising automatic weighing instrument having a weigh hopper with a maximum capacity of 1 800 kg. The indication of the weigh hopper (which is used to determine discrete load values that are totalised and then rounded to the nearest totalisation scale interval to provide the totalised load value) has a scale interval of 2 kg.

The instrument is approved for use with a minimum totalised load (Σ_{\min}) of not less than 20 000 kg and a totalisation scale interval of 2 kg. The instrument is set to have a target discrete load of 1 800 kg.

The MEAG-DUMP instrument permanently records the *totalised bulk load delivered* and the net value of each discrete load delivered. This information can be sent to a printer if required.

Note 1: The primary indication of the system approved for trade use is the non-resettable *totalised bulk load delivered* value (a total of the *discrete load delivered values*, displayed as $\Sigma 2$ on the Buhler indicator).

Note 2: The discrete load values are NOT approved for trade use.

Note 3: The *totalised bulk load delivered* is the quantity discharged from the weigh hopper. For this to correctly reflect the quantity delivered into the weighing system (e.g. at the product intake), it is important that the system is correctly purged (cleared of residual product) prior to, and following a *bulk load delivery*.

1.2 Weighing System

The pattern comprises:




- (a) A Bühler model MSDT hopper-type weigh bin directly supported by three symmetrically-located load cells (Figure 1);
- (b) Three HBM model HLCB1C3 1.76T, Class C3 load cells of 1760 kg maximum capacity mounted as shown in Figure 2; and
- (c) A Bühler model MEAG digital indicator (Figure 3).
- (d) A printer (to print transaction data), or equivalent record in electronic form.


Note: Ducting/containment arrangements for delivery of material and handling of the displaced air can influence instrument performance and should be considered in testing.

1.3 Indicator

The Bühler model MEAG digital indicator controls the measurement functions, totalising, process starting and stopping, upper and lower gate controls, gate limit switches, and alarm functions. In normal operation the measurement data is entered and read on the operator's personal computer located in the control room.

The version of the MEAG firmware can be displayed by applying following sequence:

- a. Hold the two keys  and  for greater than one second
- b. Using the  key select the "ADC Menu"

- c. Using the  key select "SWVERS"

This should display the approved firmware version V10A.

The system is designed to ensure retention of metrological information in the event of a power failure.

Note: The system may also be controlled and weighing data accessed by other (networked) computers. See the related note in the Test Procedure.

1.4 Operation

The automatic weighing cycle is started with the weigh bin empty. The bin is then filled with product and weighed; after emptying, the bin is weighed again. The difference in the two weighings is the *delivered load*. The instrument operating parameters, such as *target discrete load*, *target totalised delivery*, and *shutoff adjustments*, are programmed via the keyboard on the indicator. The delivery sequence may be initiated locally at the instrument, or remotely via the operator's personal computer.

1.5 Markings and Notices

- (a) Instruments carry the following markings, grouped together in a clearly visible place on the instrument, either on a descriptive plate fixed near the indicating device or on the indicating device itself:

Manufacturer's mark, or name written in full	Bühler Australia Pty Ltd
Indication of accuracy class	0.5
Pattern approval mark for the instrument	6/14B/27
Model number	MEAG-DUMP MSDT-2400
Serial number
Maximum capacity	Max = 1800 kg *
Minimum capacity	Min = 360 kg *
Minimum totalised load	$\Sigma_{\min} = 20\,000$ kg *
Totalisation scale interval	$d_t = 2$ kg
Material to be measured

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

- (b) Instruments carry a notice visible to the operator stating TARGET LOAD SHALL BE 1800 kg ONLY, or similar wording. (This refers to the *target discrete load*.)

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Sealing Provision

Provision is made for the calibration adjustments in the indicator (protected by internal switch) to be sealed by means of the method shown in Figure 4.

TEST PROCEDURE

Instruments shall be tested in accordance with any relevant tests for this category of instrument.

Maximum Permissible Errors

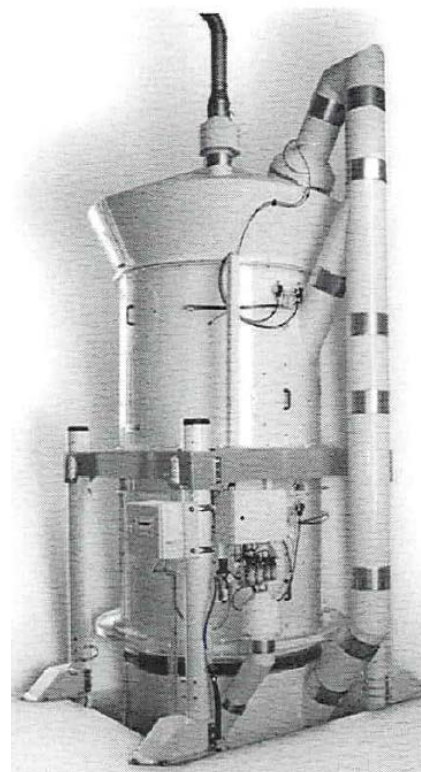
The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

It is important to check that indications of any remote indications (i.e. of networked computers – see the note to *1.3 Indicator*), are the same as those of the Bühler indicator.

FIGURE 6/14B/27 – 1



(a) Photograph of (part of) actual instrument located at Allied Mills Pty Ltd



(b) Wider view of similar instrument.

Bühler model MSDT hopper-type weigh bin

FIGURE 6/14B/27 – 2

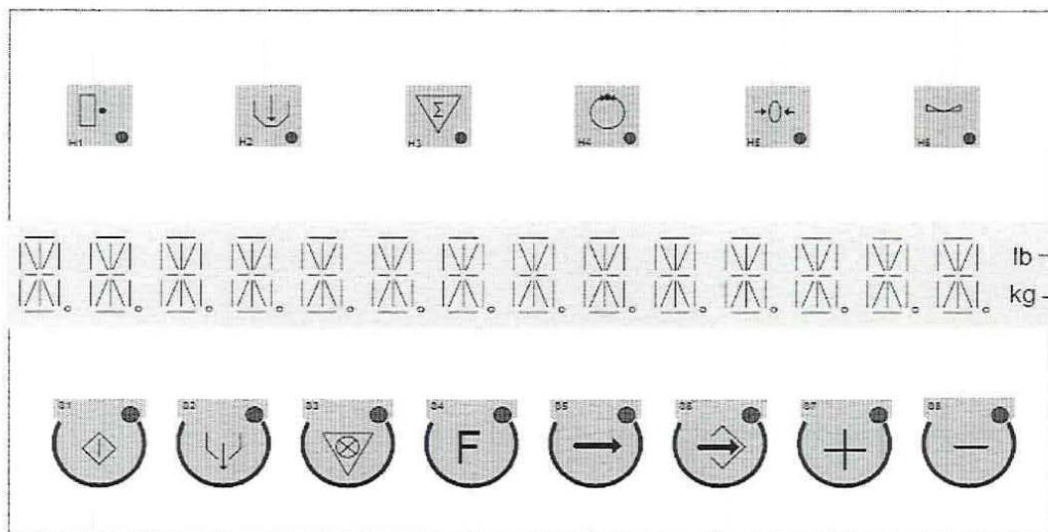


HBM Model HLCB1C3 1.76T load cell, mounting arrangement

FIGURE 6/14B/27 – 3

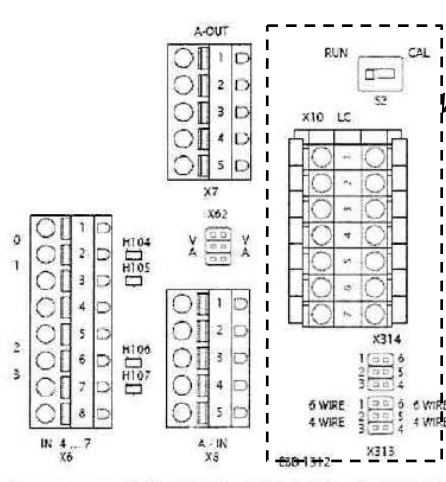
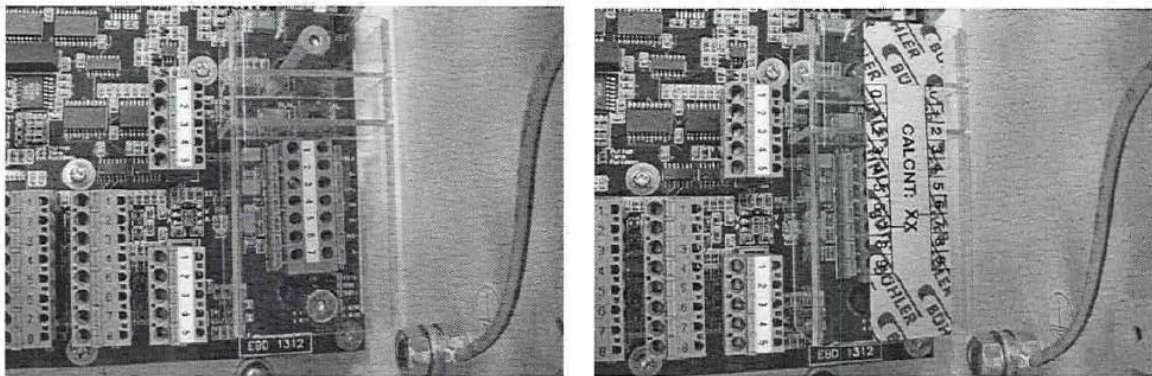


(a) MEAG-DUMP controller



(b) MEAG-DUMP controller display/keypad
Note: the 'lb' units are not used

FIGURE 6/14B/27 – 4



Access to this area (including RUN/CAL switch) restricted and sealed as shown above.

MEAG-DUMP controller sealing arrangement

~ End of Document ~