6/14G/7
11 March 2011

Australian Government
National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Cancellation

Certificate of Approval

No 6/14G/7

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that the approval for use for trade granted in respect of the

Sandvik Model ACI1 Automatic Catchweighing Instrument

submitted by Mettler Toledo Limited
220 Turner Street
Port Melbourne VIC 3207

has been cancelled in respect of new instruments as from 1 April 2011.

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

6/14G/7
18 November 2002

National Standards Commission

12 Lyonpark Road, North Ryde NSW

Certificate of Approval

No 6/14G/7

Issued 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

Sandvik Model ACI1 Automatic Catchweighing Instrument

submitted by Mettler Toledo Limited
220 Turner Street
Port Melbourne VIC 3207.

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.

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CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 November 2007, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 6/14G/7 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 Commission 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 the Commission's Document NSC P 106.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0/A.

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

DESCRIPTIVE ADVICE

Pattern: approved 2 October 2002

- A Sandvik model ACI1 class Y(a) automatic catchweighing instrument of 70 kg maximum capacity.

Technical Schedule No 6/14G/7 describes the pattern.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 6/14G/7 dated 18 November 2002
Technical Schedule No 6/14G/7 dated 18 November 2002 (incl. Test Procedure)
Figures 1 to 3 dated 18 November 2002

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

TECHNICAL SCHEDULE No 6/14G/7

Pattern: Sandvik Model ACI1 Automatic Catchweighing Instrument

Submittor: Mettler Toledo Limited
220 Turner Street
Port Melbourne VIC 3207

1. Description of Pattern

A Sandvik model ACI1 class Y(a) automatic catchweighing instrument with a maximum capacity of 70 kg, a verification scale interval of 0.05 kg, a minimum capacity of 0.25 kg, and approved for postal/freight use only. The instrument is only approved to weigh objects which are stationary on the platform.

1.1 Details

The Sandvik model ACI1 class Y(a) automatic catchweighing instrument (Figure 1) comprises:

(a) The Mettler Toledo model JagXtreme indicator.

(b) The Sandvik model ACI1 weighing unit on which the two conveyors which form the weighing platform are located (an 'incoming' weigh conveyor and an 'outgoing' weigh conveyor). The weighing platform has maximum nominal dimensions of 1000 x 2000 mm.

(c) Infeed and outfeed conveyors and the programmable logic controller (PLC) which controls the conveyors.

(c) A computer system which controls the conveyor system and onto which the weighing results are recorded.

The infeed conveyors deliver the packages to the incoming weigh conveyor (pausing or spacing the packages if necessary). The incoming and outgoing weigh conveyors slow down and stop the package on the platform where the weight is determined (for small packages, only the incoming weigh conveyor may be involved in slowing and stopping the package).

The weighing platform is connected to the Mettler Toledo model JagXtreme indicator, and conveyor motors and other sensors are connected to a PLC (programmable logic controller). Both the JagXtreme and PLC are connected to a computer that coordinates the measuring system, and collects the measurement data. This computer may in turn be connected to a management/accounting system for invoicing purposes.

The package is required to be stationary on the platform for a period of at least 740 ms (this is a parameter setting within the system computer). The JagXtreme indicator filters the weight values to arrive at the final weight value.

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1.2 Operation

The system is incorporated into a package distribution system. Packages are introduced onto the infeed conveyor(s), possibly by other conveyor lines.

Optical sensors connected to the PLC provide information regarding the size of the package, and the incoming and outgoing weigh conveyors are controlled by the PLC to slow down and stop the package on the weigh platform (for small packages the outgoing conveyor may not need to be stopped).

After the package has been stopped, the weight reading is obtained by the JagXtreme indicator and recorded by the system computer.

Once the package has been weighed the conveyor system removes the package from the platform. The package may then be further transported through the package distribution system, and the weight data is provided to the management system for invoicing purposes (together with other data identifying the package, e.g. barcode information).

1.3 Indicator

A Mettler Toledo model JagXtreme digital indicator is used (Figure 2). It displays the weight (in kg). This indicator is also described in the documentation of NSC approval No S339.

1.3.1 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 automatic zero setting facility which rezeros the instrument periodically (approximately every 20 seconds) whenever the load receptor is empty and within the zero setting range.

1.4 Weighing Unit and Conveyor System

The weighing unit contains four Mettler Toledo model 777 load cells of 100 kg maximum capacity mounted as shown in Figure 3. These load cells are also described in the documentation of NSC approval No S406.

The conveyor system comprises separate infeed and outfeed conveyors (Figure 1) and an associated electric motor drive arrangement for each conveyor. Optical sensors are provided, located alongside the conveyors.

1.5 Sealing Provision

The Mettler Toledo model JagXtreme indicator is sealed as described in the documentation of NSC approval No S339.

1.6 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

1.7 Markings and Notice

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Mettler Toledo Ltd
Model designation	.....
Serial number	.....
Accuracy class	Y(a)
Pattern approval mark	NSC No 6/14G/7
Maximum capacity	*Max* ….
Minimum capacity	*Min* ….
Verification scale interval	*e* = ….

A notice advising FOR POSTAL/FREIGHT USE ONLY is also provided.

TEST PROCEDURE

Non-automatic Operation

The maximum permissible errors for increasing and decreasing loads on initial verification/certification for loads, *m*, expressed in verification scale intervals, *e*, are:

±0.5*e* for loads $0 \leq m \leq 500$;
±1.0*e* for loads $500 < m \leq 2\,000$; and
±1.5*e* for loads $2\,000 < m \leq 10\,000$.

- With the conveyor switched off, carry out a load test and an eccentricity test.

Automatic Operation

The maximum permissible errors for class Y(a) automatic catchweighing instruments for increasing and decreasing loads on initial verification/certification for loads, *m*, expressed in verification scale intervals, *e*, are:

±1.5*e* for loads $0 \leq m \leq 500$;
±2*e* for loads $500 < m \leq 2\,000$; and
±2.5*e* for loads $2\,000 < m \leq 10\,000$.

- Prepare two test objects, one close to minimum capacity and one close to maximum capacity. With the conveyors running, apply each mass separately at least ten times. The masses of the test objects shall be measured on a verified, non-automatic weighing instrument with an uncertainty equal to or better than 0.5*e*.
- The tests shall be conducted at the maximum rate at which the system will operate (i.e. introduce packages immediately after each other).
- Vary the position of the test objects across the receptor.

TESTS - Use the following tests to determine compliance with the maximum permissible errors - n is a whole number.

TEST 1 – Maximum permissible error = ±1.5*e*

Test load = n*e*

Readings:	A: (n - 2)*e*	reject
	B: (n + 2)*e*	reject
	A < Readings < B	accept

TEST 2 – Maximum permissible error = ±2*e*

Test load = (n + 0.5)*e*

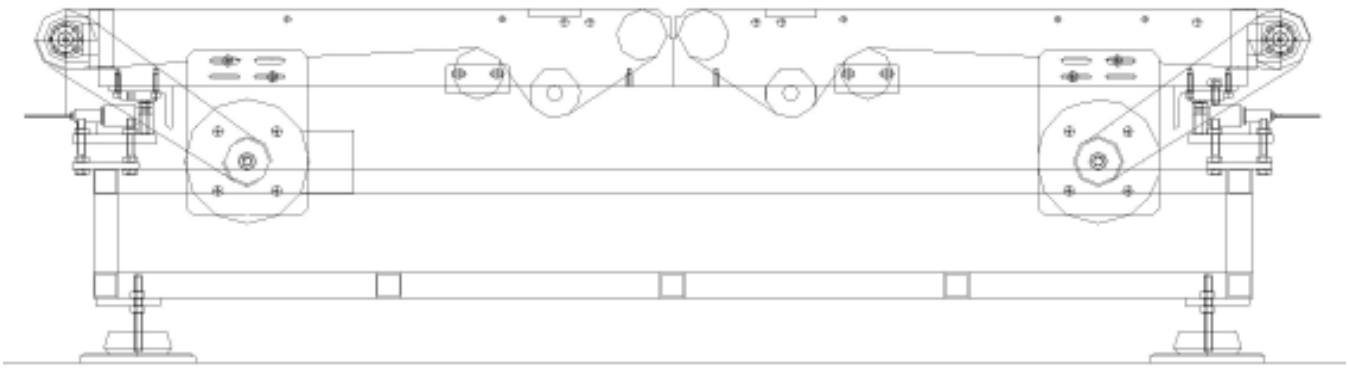
Readings:	A: (n - 2)*e*	reject
	B: (n + 3)*e*	reject
	A < Readings < B	accept

TEST 3 – Maximum permissible error = ±2.5*e*

Test load = n*e*

Readings:	A: (n - 3)*e*	reject
	B: (n + 3)*e*	reject
	A < Readings < B	accept

FIGURE 6/14G/7 - 1

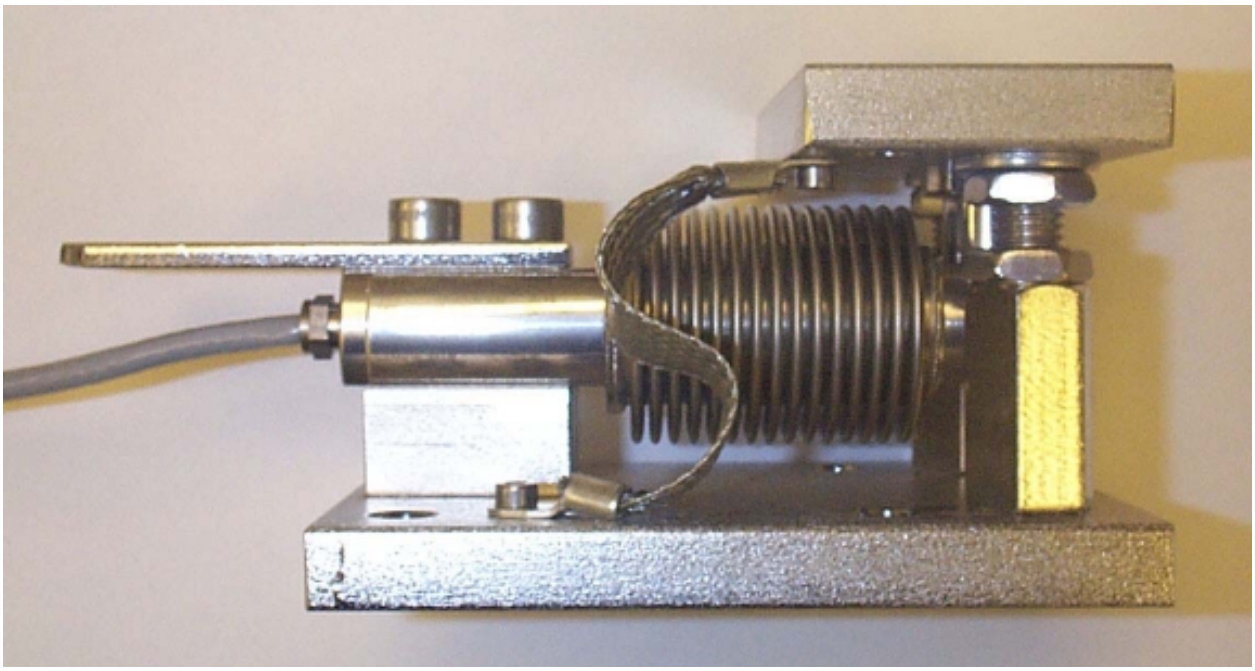


Sandvik Model ACI1 Weighing Unit

FIGURE 6/14G/7 - 2

Mettler Toledo Model JagXtreme Digital Indicator

FIGURE 6/14G/7 - 3



Mettler Toledo Model 777 Load Cell