National Standards Commission

Supplementary Certificate of Approval

No S218

Issued under Regulation 9
of the
National Measurement (Patterns of Instruments) Regulations

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

Avery Model CTR Digital Indicating System

submitted by Avery Australia Limited
3 Birmingham Avenue
Villawood NSW 2163.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

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CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/2/92.
This approval expires in respect of new instruments on 1/2/93.

Instruments purporting to comply with this approval shall be marked NSC No S218 and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked NSC No S218 in addition to the approval number of the instrument.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the drawings and specifications 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 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates Nos S1/0 and/or S2/0, as appropriate.

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.

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

DESCRIPTIVE ADVICE

Pattern: approved 19/1/87

. An Avery model CTR digital indicating system incorporating a model 8707 15 kg load cell, and approved for use with up to 2500 verification scale intervals.

Variant: approved 19/1/87

1. With a model 8707 30 kg load cell, and approved for use with up to 3000 verification scale intervals.

Technical Schedule No S218 describes the pattern and variant 1.

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Variant: approved 28/8/87

2. With a model 8707 6 kg load cell, and approved for use with up to 3000 verification scale intervals.

Technical Schedule No S218 Variation No 1 describes variant 2.

Variant: approved 10/2/88

3. With a model 8707 30 kg load cell and a variable ratio reduction lever.

Technical Schedule No S218 Variation No 2 describes variant 3.

Variant: approved 13/2/91

4. With a battery power supply.

Technical Schedule No S218 Variation No 3 describes variant 4.

FILING ADVICE

Supplementary Certificate of Approval No S218 dated 4/4/88 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises.

Supplementary Certificate of Approval No S218 dated 22/3/91
Technical Schedule No S218 dated 25/3/87
Technical Schedule No S218 Variation No 1 dated 12/11/87
Technical Schedule No S218 Variation No 2 dated 4/4/88
Technical Schedule No S218 Variation No 3 dated 22/3/91
Test Procedure No S218 dated 25/3/87
Figures 1 and 2 dated 25/3/87

TECHNICAL SCHEDULE No S218

Pattern: Avery Model CTR Digital Indicating System.

Submittor: Avery Australia Limited
3 Birmingham Avenue
Villawood NSW 2163

1. Description of Pattern

An Avery model CTR digital indicating system (Figure 1) incorporating an Avery model 8707 load cell of 15 kg maximum capacity, assembled in a headwork cabinet with a spring deadload reduction mechanism (Figure 2). The indicating system (indicator/load cell combination) is approved for use with up to 2500 verification scale intervals, and the components of the system shall not be separated.

The digital indicating system may be used to replace the resistant mechanism at the nose end of a Commission-approved lever type platform weighing instrument, however the live load applied to the digital indicating system shall be no more than 15 kg and no less than 5 kg. The maximum capacity of the instrument corresponds to the live load applied to the digital indicating system multiplied by the lever ratio of the basework.

1.1 Zero

Zero is automatically corrected to within $\pm$ 0.25e whenever the instrument comes to rest within 0.5e of zero. If the instrument comes to rest outside that range but within the zero reset range, zero may be reset by pressing the zero button. The zero light illuminates whenever zero is within 0.25e.

1.2 Tare

A semi-automatic subtractive taring facility allows a mass on the load receptor of up to maximum capacity to be tared to within $\pm$ 0.25e, as indicated by the zero and tare lights illuminating. Removal of the tared mass results in either the indicator blanking or showing the tare value preceded by a minus sign, or the tare being automatically cancelled, depending on which option is selected internally.

1.3 Display Check

A display check is initiated whenever power is applied or whenever the test button is pressed.

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1.4 Markings

1.4.1

Instruments are marked with the following data, together in one location:

Manufacturer's name or mark	
Serial number	
Accuracy class	(III)
Maximum capacity	Max ..... kg *
Minimum capacity	Min ..... kg *
Verification scale interval	e = d = ... kg *
Maximum subtractive tare	T = - ..... kg
NSC approval numbers - Indicator/load cell	NSC No S218
- Basework	#
- Other components (where applicable)	#
Load cell serial number	#

Where the maximum capacity of the instrument is 30 kg or less the instrument must also be marked NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC or similar.

* Repeated close to the reading face if not already in that vicinity.

\# May be located separately from the other markings.

1.4.2

The following is the minimum data required to be marked on the load cells:

Manufacturer's name or mark
Model number
Serial number
Maximum rated capacity

1.5 Verification Mark

Provision is made for a verification mark to be applied.

2. Description of Variant 1

The Avery model CTR digital indicating system incorporating an Avery model 8707 load cell of 30 kg maximum capacity and with or without a 2:1 reduction lever. The indicator/load cell combination is approved for use with up to 3000 verification scale intervals, and the components of the system shall not be separated.

The live load applied to the indicator/load cell combination shall be no more than 30 kg and no less than 7.5 kg or, when fitted with the 2:1 reduction lever, the live load shall be no more than 60 kg and no less than 15 kg. The maximum capacity of the instrument corresponds to the live load applied to the digital indicating system multiplied by the lever ratio of the basework.

TEST PROCEDURE No S218

All load applications to the instrument should be in accordance with the Commission's recommended testing procedure for the elimination of rounding error as set out in Document 104.

The maximum permissible errors are:

± 0.5e for loads between 0 and 500e;
± 1.0e for loads between 501e and 2000e; and
± 1.5e for loads above 2000e.

1. Zero Test

As the automatic device may reset zero when the weighing mechanism is in equilibrium within 0.5e of zero, zero should be checked as described in Document 104, with a load equal to, say, 10e on the load receptor. The indications with 0.25e and 0.75e additional mass on the load receptor will be 10e and 11e respectively.

2. Zero Range

The maximum range of operation of the zero setting device should not exceed 4% of the maximum capacity (± 2% approximately). With zero balance indicated apply a load of, say, 2.5% of maximum capacity to the instrument and press the zero button; the instrument should not rezero.

3. Load Test

Test loads are to be applied to the instrument in not less than 5 approximately equal steps increasing to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps to zero load.

4. Range of Indication

(a) The maximum mass indicated should not exceed the marked maximum capacity by more than 10e; above this indicated mass the indication should be blank or show non-numerical characters.

(b) The minimum mass indicated should be zero; below this the indication should be blank or show non-numerical characters.

5. Taring

The semi-automatic tare function should be able to reset the mass indicator to zero within 0.25e at any load within its capacity. This may be checked as described for Zero Test.

A tare should not be able to be acquired above the marked tare capacity.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S218

VARIATION No 1

Pattern: Avery Model CTR Digital Indicating System

Submittor: Avery Australia Limited
3 Birmingham Avenue
Villawood NSW 2163

1. Description of Variant 2

An Avery model CTR digital indicating system incorporating an Avery model 8707 load cell of 6 kg maximum capacity. The digital indicating system (indicator/ load cell combination) is approved for use with up to 3000 verification scale intervals, and the components of the system shall not be separated.

The maximum live load applied to the digital indicating system shall be no more than 6 kg and no less than 1.8 kg. The maximum capacity of the instrument corresponds to the maximum live load applied to the digital indicating system multiplied by the lever ratio of the basework.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S218

VARIATION No 2

Pattern: Avery Model CTR Digital Indicating System.

Submittor: Avery Australia Limited
3 Birmingham Avenue
Villawood NSW 2163.

1. Description of Variant 3

The Avery model CTR digital indicating system incorporating an Avery model 8707 load cell of 30 kg maximum capacity and with a variable ratio reduction lever with a maximum ratio of 4:1. The indicator/load cell combination is approved for use with up to 2000 verification scale intervals, and the components of the system shall not be separated.

When using the 4:1 ratio the live load range (measuring range) applied to the indicator/load cell combination shall not be more than 120 kg nor less than 30 kg. The maximum capacity of the instrument corresponds to the live load range applied to the digital indicating system multiplied by the lever ratio of the basework.

National Standards Commission

TECHNICAL SCHEDULE No S218

VARIATION No 3

Pattern: Avery Model CTR Digital Indicating System.

Submittor: Avery Australia Limited
3 Birmingham Avenue
Villawood NSW 2163.

1. Description of Variant 4

With a battery power supply.

The display blanks whenever the instrument goes into "low battery condition" and is reset by means of the RESET switch.

NOTIFICATION OF CHANGE

In Technical Schedule No S218 dated 25/3/87, cl. 1. Description of Pattern should be amended to include the following paragraph:

"The instrument is fitted with a fixed single-point (mid-range) linearisation facility."

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S218

CHANGE No 1

The following change is made to the approval documentation for the

Avery Model CTR Digital Indicating System

submitted by Avery Australia Limited
3 Birmingham Avenue
Villawood NSW 2163.

In Technical Schedule No S218 dated 25/3/87, amend the first sentence of clause 1. Description of Pattern to read, in part:

"... with a spring deadload reduction mechanism, where necessary (Figure 2)".

Signed

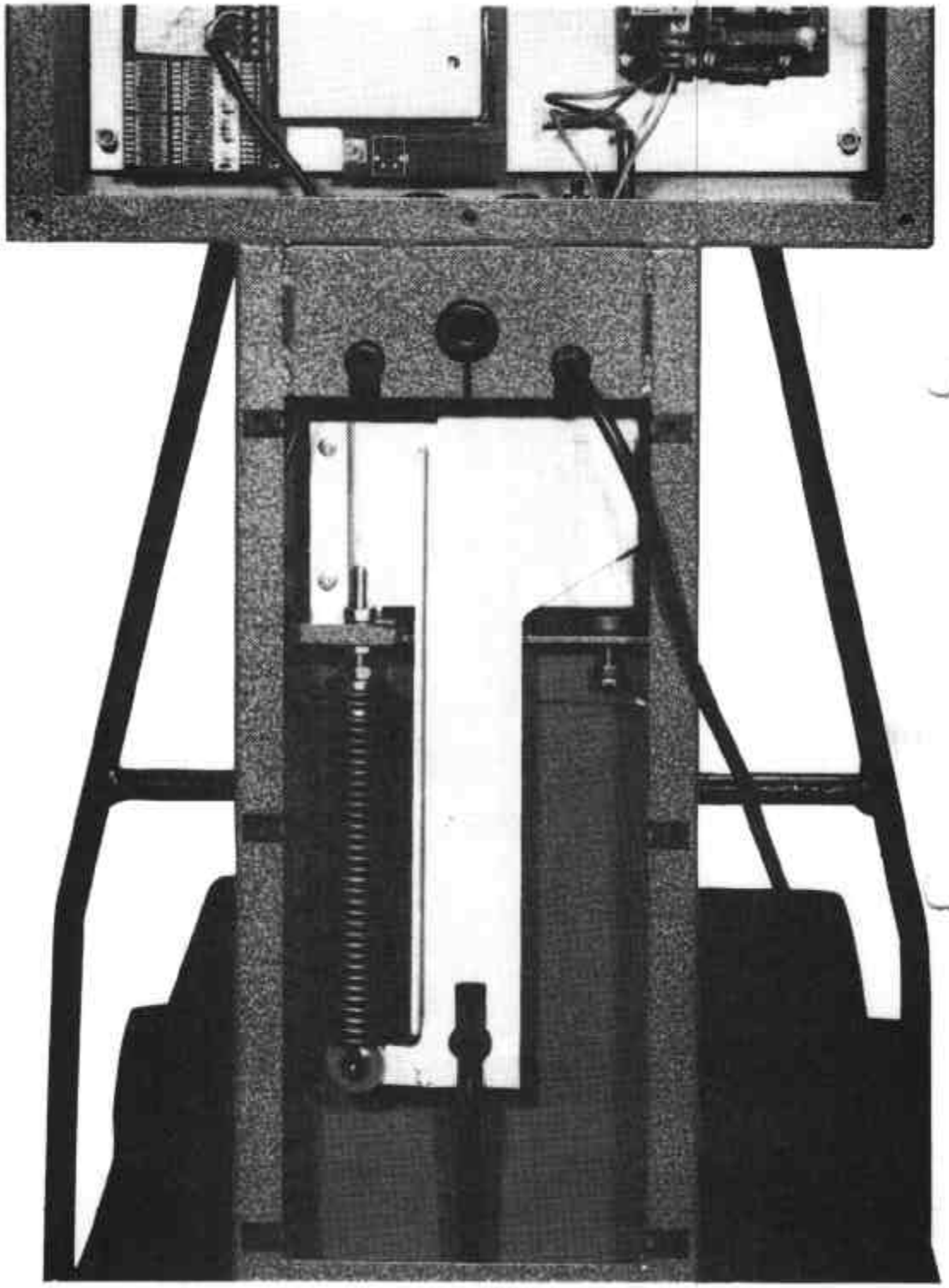
J. Birch.

Executive Director

FIGURE S218 - 1

Avery CTR Indicating System

FIGURE S218 - 2



Deadload Reduction Mechanism
(Without 2:1 Lever)