

WEIGHTS AND MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

#### REGULATION 9

#### SUPPLEMENTARY CERTIFICATE OF APPROVAL No S113

This is to certify that an approval has been granted by the Commission that the pattern and variants of the

Avery Model 8653 Digital Indicator

submitted by Avery Australia Ltd 3–5 Birmingham Avenue Villawood, New South Wales, 2163

are suitable for use for trade when replacing the indicator in any Commissionapproved weighing instrument.

The approval of the pattern and variants is subject to review on or after 31/10/85.

Instruments purporting to comply with this approval, shall be marked NSC No S113 in addition to the approval number of the pattern to which they are connected.

#### Conditions of Approval

- 1. Instruments shall only be used in accordance with the drawings and specifications lodged with the Commission.
- 2. The number of scale intervals applicable to the weighing instrument in which this indicator is used shall be no greater than the number of verification scale intervals approved for the basework(s), the load cell(s), the indicator, or the headwork(s), whichever is the smallest.

Signed Executive Director

#### Descriptive Advice

Pattern: approved 21/10/80

Avery model 8653 digital indicator with a maximum of 3072 scale intervals.

Variants: approved 21/10/80

1. Without the tare function.

2. Without the automatic zero-correction.

3. Without the GROSS/NET button.

Technical Schedule No S113 dated 3/11/80 describes the pattern and variants 1 to 3.

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Supplementary Certificate of Approval No S113

Variant: approved 16/4/81

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4. In an alternative housing.

Technical Schedule No S113 Variation No 1 dated 15/5/81 describes variant 4.

Variant: approved 22/10/81 expired 1/10/83

5. One or two model 8653 indicators used with a model 8300 series computer and model 8662 printer, known as the Avery System 8300.

Technical Schedule No S113 Variation No 2 dated 9/11/81 describes variant 5.

Variant: approved 11/6/82

6. The pattern and variants 1 to 3 connected to a model 8663 printer forming part of a model 8665 driver control station.

Technical Schedule No S113 Variation No 3 dated 5/7/82 describes variant 6.

Variant: approved 15/10/82

7. The pattern in an alternative housing suitable for table top or pillar mounting.

Technical Schedule No 5113 Variation No 4 dated 5/11/82 describes variant 7.

Variant: approved 17/8/83

8. Two model 8653 indicators in one housing.

Technical Schedule No S113 Variation No 5 dated 19/9/83 describes variant 8.

#### Filing Advice

Certificate of Approval No S113 dated 5/11/82 is superseded by this Certificate and may be destroyed. The approval of variant 5 will expire in respect of new instruments on 1/10/83. The documentation for this approval now comprises:

Certificate of Approval No S113 dated 19/9/83 Technical Schedule No S113 dated 3/11/80 Technical Schedule No S113 Variation No 1 dated 15/5/81 Technical Schedule No S113 Variation No 2 dated 9/11/81 Technical Schedule No S113 Variation No 3 dated 5/7/82 Technical Schedule No S113 Variation No 4 dated 5/11/82 Technical Schedule No S113 Variation No 5 dated 19/9/83 Test Procedure No S113 Variation No 5 dated 19/9/83 Test Procedure No S113 Variation No 3 dated 5/7/82 Figures 1 and 2 dated 3/11/80 Figures 4 to 10 dated 9/11/81 Figures 11 to 13 dated 5/7/82 Figures 14 and 15 dated 5/11/82.



#### TECHNICAL SCHEDULE No S113

Pattern: Avery Digital Indicator Model 8653

Submittor: Avery Australia Ltd, 3-5 Birmingham Avenue, Villawood, New South Wales, 2163

#### 1 Description of Pattern

A digital mass indicator capable of displaying up to 3072 scale intervals (Figure 1). It may be substituted for Avery Indicator Model 8650 in any of the patterns listed in Table 1.

#### 1.1 Zero

- (a) By adjusting the tool operated zero the instrument can be zeroed within ±0.25 e. The zero light marked 'CENTRE ZERO' illuminates when zero is obtained within ±0.25 e.
- (b) An automatic zero-correction device resets zero within ±0.25 e, whenever the mass indicator indicates zero.

#### 1.2 Tare

- (a) A semi-automatic subtractive taring device allows a mass on the load receptor of up to 3072 e to be tared within 0.25 e.
- (b) When in gross mode the NET indicator illuminates when the TARE button is pressed.
- (c) When in net mode the NET indicator remains illuminated when the TARE button is pressed.

#### 1.3 GROSS/NET Button

When the GROSS/NET button is pressed:

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#### Technical Schedule No S113

(i) The NET indicator illuminates and the indicator displays the net mass (gross mass minus the tare mass).

or

(ii) The GROSS indicator illuminates and the indicator displays the gross mass (total mass on the load receptor).

#### 1.4 Check Button

When the button marked CHECK is pressed the indicator displays the blanks and then all 8's when the button is released.

#### 1.5 Marking

Instruments which incorporate this headwork are to be marked on the indicator with the following data:

Manufacturer's name Accuracy class in the form: Serial number of instrument Maximum capacity in the form: Minimum capacity in the form: Verification scale interval in the form: Maximum subtractive tare in the form: NSC approval numbers in the form:

Headwork NSC No .... NSC No S113 Basework NSC No ....

Load cell serial number

#### 1.6 Sealing

A lead and wire seal passes through a retaining screw on the indicator (Figure 2).

#### 2. Description of Variants

- 1. Without the tare facility.
- 2. Without automatic zero correction.
- 3. Without the GROSS/NET button.

"These markings are repeated in the vicinity of each reading face. 3/11/80 ...../3

#### 3. Test Procedures

- (1) Tests as per original certificate including
- (2) Taring

Tare a mass above maximum capacity. On removal of the mass no tare should have been entered, and the indicator should display all zeroes.

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# TABLE 1

Avery Indicator Model N	lo
8650	
8650	
8650	
8650	
8650	
	Avery Indicator Model N 8650 8650 8650 8650 8650

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#### TECHNICAL SCHEDULE No S113

#### VARIATION No 1

Pattern: Avery Digital Indicator Model 8653

Submittor: Avery Australia Ltd 3-5 Birmingham Avenue, Villawood New South Wales, 2163.

2. Description of Variant

2.1 Variant 4

With an alternative housing; a typical housing is shown in Figure 3.

#### 2.1.1 Sealing

A lead and wire seal passes through a cover-retaining fastener (Figure 3).



#### TECHNICAL SCHEDULE No S113

#### VARIATION No 2

Pattern: Avery Digital Indicator Model 8653

Submittor: Avery Australia Ltd, 3-5 Birmingham Avenue, Villawood, New South Wales, 2163.

#### 1. Description of Provisional Variant 5

#### 1.1

One or two Avery Model 8653 indicators used with a Model 8300 series computer and Model 8662 printer, known as the Avery System 8300 (Figure 4).

The system will have either one or two Model 8653 indicators depending on whether it is connected to one or two baseworks. The output from the indicator/s is fed into a Model 8300 series computer and is displayed on a VDU. Where there are two baseworks and hence two indicators, the mass on each basework and the sum of the masses are displayed on the VDU. Where there is one basework and one indicator, the VDU displays for two baseworks but shows zero for basework No. 2 and the total is the same as the mass on basework No. 1.

#### 1.2 Printer

The individual masses, both gross and tare, for each basework, and the respective totals and total net mass, shall be printed by the Model 8662 printer. Figures 5 and 6 illustrate sample tickets, on which the only information relevant to pattern approval is the gross, net and tare mass.

#### 1.3 Zero

Zero is set on the Model 8653 indicators as described in Technical Schedule No S113 dated 3/11/80. When the zero light is illuminated on the 8653 indicator the corresponding basework is balanced to within  $\pm$  0.25e.

When there are two baseworks, the zero light on each indicator must be illuminated to ensure that the complete instrument is balanced within  $\pm$  0.25e.

#### 1.4 Range of Indication

When the gross mass displayed on one or two indicators (depending on whether the instrument is connected to one or two baseworks) exceeds the marked maximum capacity (by up to 10 scale intervals) the mass indication will blank on the indicator/s and on the VDU.

#### 1.5 Markings

Instruments modified by inclusion of this variant are marked on the nameplate with the following data:

(a) For instruments with one basework and one indicator -

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(111) Accuracy class in the form: Manufacturer's name Maximum capacity in the form: Max = .....\* Minimum capacity in the form: Min = ....\* Verification Scale Interval in the form: d = e = .....\* NSC approval numbers in the form: Headwork NSC No. Basework NSC No. Load Cell NSC No. Serial number of basework And, in addition, NSC approval number in the form: S113 Serial number See Figure 8 (b) For instruments with two baseworks and two indicators -The above markings for each basework, under the headings Basework 1\* and Basework 2,\* and, in addition, System Verification Scale Interval in the form: E = ∑e = ..... System scale interval in the form: d = ..... NSC approval number in the form: S113 Serial number See Figure 9 Sealing 1.6

- (a) The cabinet enclosing the two Model 8653 indicators is sealed on diagonally opposite corners to prevent access to the indicators.
- (b) The serial numbers of the load cells used in the baseworks are sealed to this cabinet at the point of sealing. Figure 7 shows a typical method of sealing.

\* These markings are repeated in the vicinity of the reading face of each mass indicator (Model 8653).

#### TEST PROCEDURE No S113

#### VARIATION No 2

#### 3. Range of Indication

- (a) The maximum mass indicated on the Model 8653 indicators should not exceed the maximum capacity (Max); above this indicated mass the indication should blank. The indicated mass may exceed the marked maximum capacity by up to 10 scale intervals.
- (b) When either or both mass indicators blank, the display on the VDU of both of the individual masses, and of the total mass, should also blank.

#### 4. Multiple Indications

Where the existing headwork is retained and used in conjunction with this variant, the variation between indications and printing for the same load shall not be greater than the absolute value of the maximum permissible error for that load.

The existing headwork should be marked according to its Certificate of Approval and tested in accordance with such.

#### 5. Weights and Measures Test Printing

- (a) When the display on the VDU shows "Gross Weigh? Enter YES or NO," then
  - Press key marked "PROG" and wait for list of programs available (1 to 14).
  - (ii) Enter '10' via the keyboard and this will initiate test print in the format:

BASEWORK 1 BASEWORK 2 TOTAL

refer Figure 10.

- (b) Continue to enter '10' to give test printouts. Use paperfeed control to drive continuous paper to check printout.
  - N.B. (1) As other Computer information is stored in the system, do not press any keys other than "1" and "0".
    - (2) When checking over or under range print inhibit, it is necessary to re-initiate test sequence as from Step (a).
    - (3) Other than in test program, the printer is inhibited when the total is below 1 t.



#### TECHNICAL SCHEDULE No S113

#### VARIATION No 3

Pattern: Avery Model 8653 Digital Indicator

Submittor: Avery Australia Ltd, 3-5 Birmingham Avenue, Villawood, New South Wales, 2163.

#### 1. Description of Variant 6

The pattern and variants 1 to 3 connected to a model 8663 printer and forming part of a driver control station model 8665 (Figure 11).

#### 1.1 Sealing

#### 1.1.1 Calibration Adjustments

Access to the calibration adjustments is prevented by a lead and wire seal as shown in Figure 12.

#### 1.1.2 Load Cell

The load cell plug and socket are sealed as shown in Figure 13 or the load cell serial numbers are marked on metal tags sealed to the indicator (say, using the same lead and wire seal shown in Figure 12).

#### TEST PROCEDURE No S113

#### VARIATION No 3

NOTE: This Test Procedure replaces that included in Technical Schedule No S113 dated 3/11/80.

Test Procedure No S113, Variation 2 dated 9/11/81 should be re-numbered; (Test 3. becomes Test 1. etc....).

The following tests should be carried out in conjunction with the test procedures in the Technical Schedule of the instrument to which the pattern or variants are connected.

Where applicable, this Test Procedure should be used in conjunction with Test Procedure Variation No 2 dated 9/11/81.

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; ± 1e for loads between 501e and 2000e; and ± 1.5e for loads above 2000e.

#### 1. Zero Range

The maximum range of operation of the zero device should not exceed 4% of the capacity of the instrument (± 2% approximately). Satisfactory setting may be checked by the following method:

- (a) With zero balance indicated apply a load of, say, 2.5% of maximum capacity to the instrument and adjust the tool-operated zero; the instrument should not re-zero.
- (b) Reduce the load to, say, 1.5% of maximum capacity and again adjust zero; the instrument should indicate zero balance.

#### 2. Zero Test

- (a) Check by means of Document 104 that when the CENTRE ZERO light is lit, zero is set within 0.25e.
- (b) As the automatic zero correction device (where fitted) resets 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 then be 10e and 11e respectively.

#### 3. Range of Indication

- (a) The maximum mass indicated should not exceed the maximum capacity (Max) by more than 10 scale intervals; above this indicated mass the indicator should be blank.
- (b) Below zero the indication may blank or the mass may be indicated prefixed by a minus sign.

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#### 4. Taring

- (a) Attempt to tare a mass above maximum capacity as determined in 3(a). On removal of the mass no tare should have been entered, and the indicator should display all zeroes.
- (b) The tare function should reset the mass indicator to zero within 0.25e at any load within its tare capacity. This may be checked as described for Zero Test - 2(a).

#### 5. Test Loads

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

#### 6. Multiple Indicators

Where the existing headwork is retained and used in conjunction with the pattern, the variation between indications or printings for the same load shall not be greater than the absolute value of the maximum permissible error for that load on the device with the largest verification scale interval.

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#### TECHNICAL SCHEDULE No S113

#### VARIATION No 4

Pattern: Avery Model 8653 Digital Indicator

<u>Submittor</u>: Avery Australia Ltd 3-5 Birmingham Avenue Villawood, New South Wales, 2163.

#### 1. Description of Variant 7

In an alternative housing (Figure 14) suitable for table top use or mounting on a pillar.

#### 1.1 Sealing

Using a lead and wire seal with the wire passing through a cover retaining bolt on the rear of the indicator (Figure 15).



#### TECHNICAL SCHEDULE No S113

#### VARIATION No 5

Pattern: Avery Model 8653 Digital Indicator

#### Submittor: Avery Australia Ltd 3-5 Birmingham Avenue Villawood, New South Wales, 2163.

#### 1. Description of Variant 8

Two Avery model 8653 indicators together in one housing (as shown in Figure 4) for use with two baseworks.

1.1 Test Procedure

Test Procedure No S113 Variation No 2 dated 9/11/81, tests 1. and 2., should be used.





#### NOTIFICATION OF CHANGE

#### SUPPLEMENTARY CERTIFICATE OF APPROVAL No S113

#### CHANGE No 2

The following change is made to the description of the Avery Model 8653 Digital Indicator given in Technical Schedule No 5113 dated 3/11/80.

To Description of Pattern, add the following sentence to the first paragraph:

"The indicator is approved for connection with up to four 350  $\Omega$  load cells".

Signed

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Executive Director



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CANCELLATION OF VARIANT 5 OF APPROVAL No S113

This is to certify that Variant 5\* of Approval No S113 for the pattern of the

Avery Model 8653 Digital Indicator

submitted by Avery Australia Ltd 3-5 Birmingham Avenue Villawood, New South Wales, 2163

will expire in respect of new instruments on 1/10/83.

Instruments which were verified before that date may, with the concurrence of the State or Territorial verifying authorities, be submitted for reverification.

Signed

Executive Director

\*Variant 5 is described in Technical Schedule No S113 Variation No 2 dated 9/11/81.



#### NOTIFICATION OF CHANGE

#### SUPPLEMENTARY CERTIFICATE OF APPROVAL No S113

#### CHANGE No 3

The following changes are made to the description of the Avery Model 8653 Digital Indicator.

1. In Supplementary Certificate of Approval No S113 dated 19/9/83,

Change Condition of Approval No 1 to read:

"The approval may be withdrawn if used other than as described in the drawings and specifications lodged with the Commission."

2. In Technical Schedule No S113 dated 3/11/80,

from <u>Description of Pattern</u>, delete the following sentence from the first paragraph:

"The indicator is approved for connection with up to four 350  $\Omega$  load cells".

Signed

Executive Director

30/9/83



#### NOTIFICATION OF CHANGE

Supplementary	Certificates	of	Approval	Nos	\$102 \$104 \$106 \$108	
					S113	
					<b>S116</b>	

The changes given below are made to the descriptions of the following Supplementary Certificates:

Cartificate No.

#### Title

Toledo Digital Indicator Hadel 8132
Toledo Digital Indicator Model 8134
Avery Digital Indicator Hodel 8652
Ultra Indicator Hodel 9000
Avery Digital Indicator Hodel 8653
Toledo Digital Indicator Hodel 8136

1. Certificate

Add to end of first paragraph:

..., or when replacing the indicator in any other Commission-approved weighing instrument.

2. Technical Schedule

Add to end of paragraph 1:

..., or for the indicator in any other Commission-approved weighing instrument.

Signed

Executive Director

Note:

These changes have been made as a result of increased confidence in the performance of the indicators in conjunction with widely varying makes and capacities of load cells.

27/4/81



3/11/80



3/11/80

FIGURE SI13 - 3





FIGURE S113 - 5



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REGISTRATION	No. GOODSEL	GROWERS/S	HAREFARMERS NAME		AFCE	PT NUMBER
TIME IN	GROSS 42.68t 12.75t	TOTAL GROSS WEIGHT 55.43t	<ol> <li>acknowledge that the arco for which he will n below verifiery is the w Centit will not be given</li> </ol>	ret weight will be undit bothe payment, and to con why delyweed by the i (or grain doeweed under	I and the the Grower whenes n ity that its the peak of my k a this certificate is signed	arriel is imperinted above controling and benefit has
TIME OUT	1 TARE 2 14.82t 12.75t	TARE 27.57t	WEIGHT NET 27.86t	GROWER O	R HIS AGENT'S SIG	NATURE
IVERY TO DATE	CHON. WT.	роскаде \$10.00 ай	REASONS 68.10 04.00 \$.5	Low Note	VARIETY COOK 64	1 6. GO

Sample Ticket (actual aize) - Two Banework

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**GRAIN RECEIPT** 

# C 88602 GRAIN HANDLING AUTHORITY OF N.S.W.

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Sample Ticket (actual size) - Single Basework



AVERY AUSTRALIA LIMITED SYSTEM SERIAL NO. NSC NO. TYPE BASEWORK NSC NO'S. CLASS (II) MAX = SERIAL NO. BASEWORK HEADWORK LOAD CELL ≡ e=Pp TYPE

Avery System 8300 - Nameplate for Instrument with Single Basework

FIGURE S113 - 9

E = Ze = li To SYSTEM SYSTEM VERIFICATION **S113** SCALE INTERVAL SYSTEM SCALE SERIAL NO. INTERVAL NSC NO. AVERY AUSTRALIA LIMITED TYPE **BASEWORK 2** NSC NO'S. SERIAL NO. CLASS (II) MAX = HEADWORK BASEWORK LOAD CELL 11 a e = pp NIW TYPE BASEWORK NSC NO'S SERIAL NO. HEADWORK BASEWORK LOAD CELL CLASS (II) MAX = 11 = e = pp TYPE NIW

Avery Sys' -m 8300 - Nameplate for Instrument with Two Bo vorks

9/11/81

5.,60t	5.59t	<b>11 1</b> 9t
5 60t	5 59t	<b>11.1</b> 9t
5 60t	5.59t	<b>11.1</b> 9t
560t	5 59t	<b>11.1</b> 9t
5 60t	5.59t	<b>11</b> .19t
5 60t	5.58t	<b>11.1</b> 8t
5 60t	5 59t	<b>11 1</b> 9t
5.60t	5.58t	<b>11.1</b> 8t
5 60t	5.58t	<b>11 1</b> 8t
5.60t	5.58t	<b>11.18</b> t

Typical Weights and Measures Authority Test Prints FIGURE 5113 - 11



Model 8665 Indicator System

5/7/82



which want from the Sporter

FIGURE S113 - 12

5/7/82



Model 8665 - Sealing Of Load Cell Lead

FIGURE S113 - 13



