Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

Certificate of Approval

NMI 6/4D/347

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.

Teraoka Model DS-781 Weighing Instrument

submitted by W W Wedderburn Pty Ltd
101 Williamson Road
Ingleburn NSW 2565

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 1/08/21, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 6 approved – interim certificate issued	13/07/09
1	Pattern & variants 1 to 7 approved – certificate issued	31/07/09
2	Variants 8 & 9 approved – interim certificate issued	3/06/11
3	Pattern & variants 1 to 9 amended, reviewed & updated – variant 10 approved – certificate issued	31/05/16
4	Variants 11 & 12 approved – certificate issued	12/07/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4D/347' 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 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.

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 6/4D/347

1. Description of Pattern approved on 13/07/09

A Teraoka model DS-781 class (III) non-automatic multi-interval self-indicating price-computing weighing instrument (Figures 1 and 2) with a verification scale interval e_1 of 0.002 kg for up to 6 kg and with a verification scale interval e_2 of 0.005 kg from 6 kg to 15 kg.

Instruments are fitted with two LCD displays (one integrated customer display and an integrated operator display). For each display, the display consists of weight, unit price and total price.

Instruments displays weight to 99.999 kg, unit price to $999.99/kg, total price to $9999.99, and have a product look up (PLU) facility.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

1.1 Zero

A zero-tracking device may be fitted.

The initial zero-setting device has a nominal range of not more than 20% of the maximum capacity of the instrument.

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.

1.2 Tare

A semi-automatic subtractive tare device up to 5.998 kg maximum capacity may be fitted.

Where the instrument carries a notice stating NOT FOR TRADING DIRECT TO THE PUBLIC or similar wording, the instrument may be fitted with a keyboard-entered pre-set subtractive tare device (and the pre-set tare values may be associated with product look up items).

1.3 Power Supply

Power may be supplied by either:

(a) An AC/DC mains adaptor, Wedderburn model 6VDC200 (output 6 V DC, 0.2 A) or ENG model 3A-066WP06 (6 V DC, 1 A) – the submittor should be consulted regarding the acceptability of alternative power supply units; or

(b) batteries (4 × C size).

1.4 Levelling

The instrument is provided with adjustable feet and a level indicator, and adjacent to the level indicator is a notice advising that the instrument must be level when in use.

1.5 Display Check

A display check is initiated whenever power is applied.

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 to be sealed by means of destructible adhesive labels, to restrict access within the instrument housing, and to prevent access to the calibration switch. Sealing arrangements are shown in Figure 1b.

1.8 Descriptive Markings

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Teraoka
Name or mark of manufacturer's agent	WEDDERBURN
Indication of accuracy class	(III)
Pattern approval mark for the instrument	NMI 6/4D/347
Maximum capacity	*Max* ...../..... g or kg #1
Minimum capacity	*Min* ..... g or kg #1
Verification scale interval	*e* = .../..... g or kg #1
Maximum subtractive tare	*T* = - ……. g or kg #2
Serial number of the instrument	…….

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

#2 This marking is required if *T* is not equal to *Max*.

The instrument may also be required to carry a notice stating NOT FOR TRADING DIRECT TO THE PUBLIC or similar wording (see specific variants and clause **1.2 Tare** above).

2. Description of Variant 1 **approved on 13/07/09**

The pattern as multi-interval instruments of certain other capacities as listed in Table 1 below (the pattern is shown in bold).

TABLE 1

Maximum Capacity (Max_1/Max)	Verification Scale Interval (e_1,e_2)	Maximum Subtractive Tare Capacity (T = - …)
3/6 kg	1/2 g	2.999 kg
6/15 kg	**2/5 g**	**5.998 kg**
15/30 kg	5/10 g	9.995 kg

3. Description of Variant 2 approved on 13/07/09

The pattern as single range instruments of certain capacities as listed in Table 2 below:

TABLE 2

Maximum Capacity (Max)	Verification Scale Interval (e)	Maximum Subtractive Tare Capacity (T = - …)
3 kg	1 g	1.499 kg
6 kg	2 g	2.998 kg
15 kg	5 g	7.495 kg
30 kg	10 g	14.99 kg

4. Description of Variant 3 approved on 13/07/09

The model DS-781 as a 'Pole' style instrument (Figure 2a), having the same features and capacities as the pattern and variants 1 and 2, except that the customer display is mounted on a column.

5. Description of Variant 4 approved on 13/07/09

The model DS-782 instrument, available in a bench style (similar to the pattern) or a 'pole' style (similar to variant 3). The model DS-782 is similar to the model DS-781, except that it is powered by mains power (230 V AC) and/or by a 6 V rechargeable battery, and it also has a backlit LCD display.

The DS-782 series instruments of this variant are approved as single or multi-interval instruments of capacities as described in variant 1 and 2.

6. Description of Variant 5 approved on 13/07/09

The model DC-782 instruments (Figure 2b) which have similar weighing features to the DS-782 series (variant 4) but which are fitted with a single integral display and display mass only. Instruments may be fitted with a keyboard-entered pre-set subtractive tare device.

Instruments may also be fitted with a counting function which is not approved for trade use.

Instruments shall carry a notice stating NOT FOR TRADING DIRECT TO THE PUBLIC or similar wording.

The DC-782 series instruments of this variant are approved as multi-interval instruments of capacities as shown in Table 3.

TABLE 3

Maximum Capacity (Max)	Verification Scale Interval (e)	Maximum Subtractive Tare Capacity (T = - …)
3/6 kg	1/2 g	2.999 kg
6/15 kg	2/5 g	5.998 kg
15/30 kg	5/10 g	9.995 kg

7. Description of Variant 6 approved on 13/07/09

The model DC-782 instruments (similar to those described in variant 5), as single range instruments of capacities as shown in Table 4.

TABLE 4

Maximum Capacity (Max)	Verification Scale Interval (e)	Maximum Subtractive Tare Capacity (T = - …)
3 kg	1 g	1.499 kg
3 kg	0.5 g	999.5 g
5 kg	1 g	2.499 kg
5 kg	2 g	2.498 kg
6 kg	2 g	2.998 kg
6 kg	1 g	2.999 kg
10 kg	2 g	4.998 kg
12.5 kg	5 g	6.245 kg
15 kg	5 g	7.495 kg
15 kg	2 g	7.498 kg
25 kg	5 g	9.995 kg
25 kg	10 g	9.990 kg
30 kg	10 g	9.990 kg
30 kg	5 g	9.995 kg

8. Description of Variant 7 approved on 31/07/09

The model DMC-782 instruments which have the same capacities and similar features to the model DC-782 instruments described in variants 5 and 6.

Instruments may be fitted with a coin counting function in which is not approved for trade use.

Instruments carry a notice stating NOT FOR DIRECT SALES TO THE PUBLIC, or similar wording.

9. Description of Variant 8 approved on 3/06/11

The model DS-781 as single range instruments of certain capacities (and verification scale intervals) as listed in Table 5 below:

Instruments may be in any of the configurations described for the pattern and variants 3 & 4.

TABLE 5

Maximum Capacity (*Max*)	Verification Scale Interval (*e*)	Maximum Subtractive Tare Capacity (*T* = - …)
6 kg	1 g	2.999 kg
30 kg	5 g	14.995 kg

10. Description of Variant 9 approved on 3/06/11

The model DS-781SS single range and multi-interval instruments (Figure 3) which are similar to the pattern (model DS-781, having integral displays) but in a metal housing (intended to be waterproof).

Instruments may be in any of the capacities listed in Tables 1, 2 and 5.

Typical sealing arrangements are shown in Figure 4.

11. Description of Variant 10 approved on 31/05/16

The pattern and variants may have a 'confectionary scoop', 'coffee scoop', or 'seafood scoop' (Figures 5 to 7) mounted on a modified platter via a support bracket. The size and weight of scoops are listed in Table 6 below.

TABLE 6 – Scoop details

Scoop Name	Size (mm × mm)	Nominal Scoop weight (g)	Nominal Support Bracket Weight (g)	Total weight (g)
Confectionary	305 (L) × 195 (W)	340	250	590
Coffee	340 (L) × 230 (L)	406	296	702
Seafood	400 (L) × 285 (L)	654	470	1124

The scoop support bracket(s) may be directly mounted upon the instruments weigh platter or in place of the weigh platter of the instrument for the application of a removable shaped scoop. The scoop support bracket when mounted must not extend past the perimeter of the original weigh platter of the instrument.

Note 1: Mounted removable shaped scoops are intended to allow the user to contain the object(s) to be weighed in a way such that the centre of gravity of the object(s) is within the normal area of the weigh platter of the instrument. It is not intended to increase the size of the weigh platter.

Note 2: The raised edge of the removable scoop may extend past the weigh platter perimeter, provided the removable scoop's shape is such that the instrument's performance is satisfactory when eccentricity testing is carried out.

Note 3: The combined weight of the scoop and its support bracket(s) shall not exceed the initial zero setting range of the weighing instrument. This may be ascertained by fully powering off the instrument, and then switching back on – the instrument will re-zero if within the initial zero setting range.

Note 4: The instrument fitted with a scoop shall be verified in its modified form.

12. Description of Variant 11 approved on 12/07/16

The model DS-781 which is similar to the pattern and variant 1, 2, 3, 8 and 9 but having revised electronics. A separate display of tare values is provided (Figure 8).

13. Description of Variant 12 approved on 12/07/16

The model DS-782 which is similar to variant 4 but having revised electronics. A separate display of tare values is provided.

TEST PROCEDURE

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

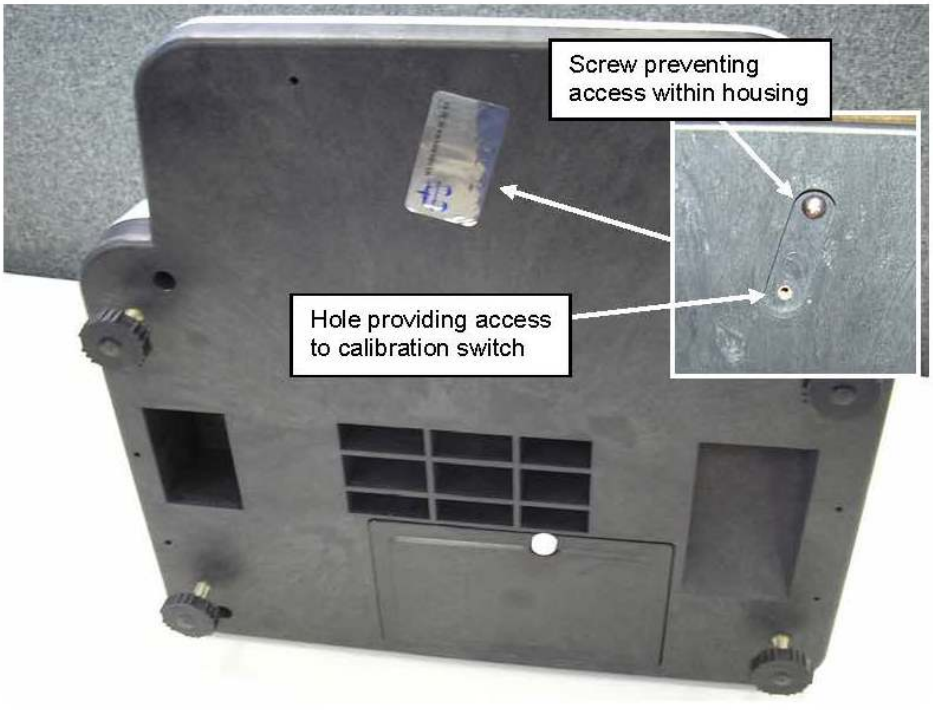
The maximum permissible errors are specified in the *National Trade Measurement Regulations 2009*.

Tests

For multi-interval and multiple range instruments with verification scale intervals of e_1, e_2 …, apply e_1 for zero adjustment, and maximum permissible errors apply e_1, e_2 …, as applicable for the load.

FIGURE 6/4D/347 – 1

(a) Teraoka Model DS-781 Weighing Instrument (integral displays)



(b) Sealing of Teraoka Models DS-781, DS-782, DC-782 and DMC-782 Instruments

Teraoka Model DS-781 Weighing Instrument (pattern) and Typical Sealing of the pattern and variants 1 to 7

FIGURE 6/4D/347 – 2

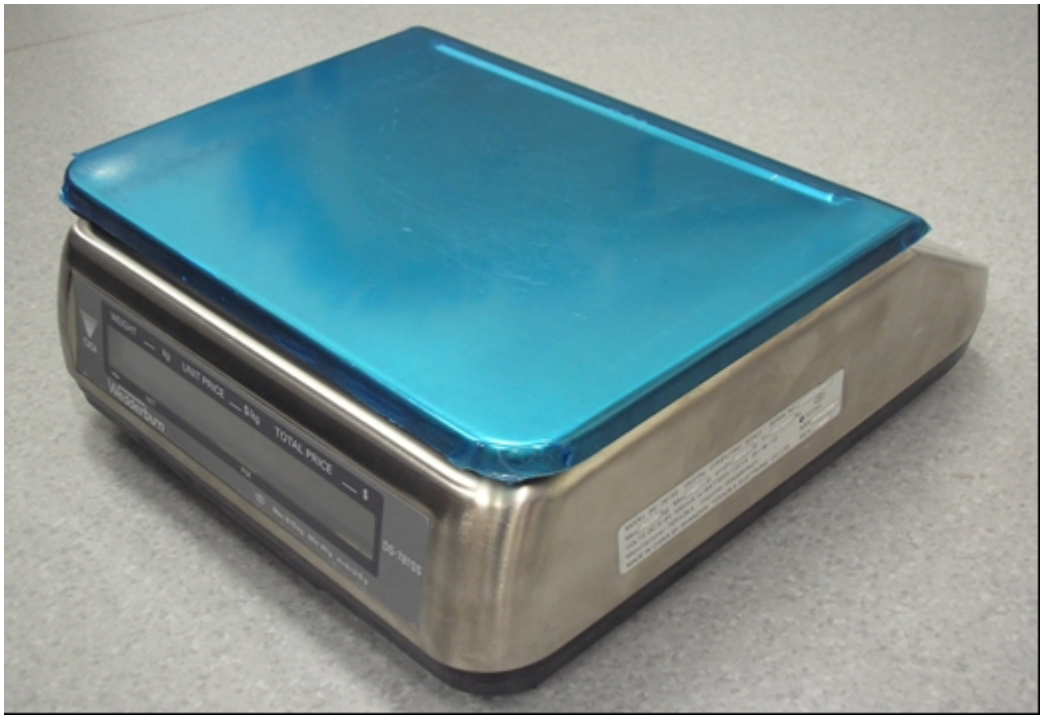
(a) Teraoka Model DS-781 Weighing Instrument (column-mounted customer display)

(b) Teraoka Model DC-782 Weighing Instrument

Models DS-781 and DC-782

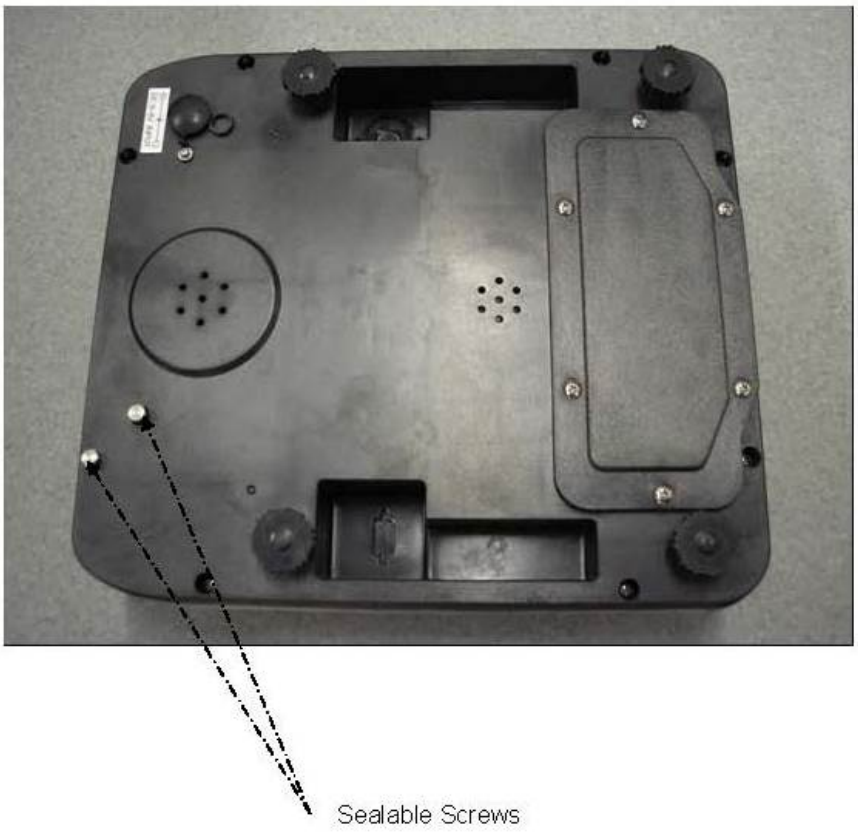
FIGURE 6/4D/347 – 3

(a) Teraoka Model DS-781SS Weighing Instrument (Operator Display)



(b) Teraoka Model DS-781SS Weighing Instrument (Customer Display)

FIGURE 6/4D/347 – 4



Teraoka Model DS-781SS Typical Mechanical Sealing (variant 9)

FIGURE 6/4D/347 – 5

With a Typical Confectionary Scoop (variant 10)

FIGURE 6/4D/347 – 6

With a Typical Coffee Bean Scoop (variant 10)

FIGURE 6/4D/347 – 7

With a Typical Seafood Scoop (variant 10)

FIGURE 6/4D/347 – 8

Model DS-781 With a Separate Tare Display (variant 11)

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