Australian Government
Department of Industry, Science and Resources
National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/4D/392

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 DIGI RM-5900 Weighing Instrument

submitted by W. W.Wedderburn Pty. Limited
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 October 2015.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 8 approved – certificate issued	15/11/19
1	Variants 9 to 10 provisionally approved – certificate issued	09/11/21
2	Variants 9 to 10 approved – certificate issued	16/02/24

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number `NMI 6/4D/392' 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 Certificate No S1/0B.

Special Conditions of Approval

Certain aspects of this instrument (in particular transaction record printing formats) are able to be configured by the user. Whilst NMI believes that acceptable formats can be achieved for typical basic sales modes, it is also possible for the instrument to be configured to produce unacceptable formats, and use of some formats may be inappropriate for different sales modes. It is the responsibility of the user to ensure that acceptable and appropriate formats are used in any particular situation.

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

Darryl Hines
Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 6/4D/392

1. Description of Pattern approved on 15/11/19

A Teraoka model DIGI RM-5900 class (III) non-automatic self-indicating price-computing multi-interval weighing instrument (Figure 1a) with a verification scale interval (el) of 0.002 kg up to 6 kg and a verification scale interval (e2) of 0.005 kg from 6 kg up to the maximum capacity of 15 kg. The minimum capacity is 0.04 kg. Instruments are fitted with a column-mounted 10 inch TFT colour touchscreen operator display/keyboard and a column-mounted 7 inch TFT colour customer display. The operator touchscreen consists of displays for presentation of tare, weight, unit price and price information, zero, and `net' indicators.

Instruments are fitted with an integral receipt printer, for printing of transaction receipt (#).

Instruments have unit price to $9999.99/kg, price to $9999.99, a product look up (PLU) facility and an image and/or product description relating to PLU items may also be displayed.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices; this may include wireless networking capabilities.

Instruments are fitted with either a 260 mm x 180 mm platform or a 260 mm x 195 mm platform.

Power for the DIGI RM-5900 instrument may be supplied by either:

· AC mains; or/and

· An internal 14.8 V Li-ion rechargeable battery.

(#) Refer to the Special Conditions of Approval in the certificate.

1.1 Zero

A zero-tracking device may be fitted.

The initial zero-setting device of the pattern 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 and/or non-automatic keyboard-entered pre-set subtractive tare device, each of up to 5.998 kg maximum tare capacity, may be fitted.

Pre-set tare values may be associated with product look up (PLU) items. A separate display of tare values is provided.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Levelling

The Instrument is provided with adjustable feet and a level indicator.

The instrument is to be used in a level condition as indicated by the level indicator.

1.5 Additional Features

Instruments may be fitted with a manual weight entry function. This function is intended for use where (for example) the instrument is being used to calculate price and the weight value had been previously determined using a separate weighing instrument.

When this function is operated, the weighing functions (and associated zero and tare functions) of the instrument (pattern and the variants) are disabled. The manually entered value is displayed separately, in the area otherwise intended for the tare value, and is designated `Manual Wt kg'.

The manually entered weight value shall be marked 'M' on the receipt and/or label to distinguish this from a value determined by weighing on the instrument.

1.6 Interfaces

The indicator may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R 76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with NMI General Supplementary Certificate No S1/0B (in particular in regard to the data and its format).

Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

Instruments may be fitted with RS-232, USB, Wifi, Ethernet and cash drawer interfaces.

1.7 Verification Provision

Provision is made for the application of a verification mark.

1.8 Descriptive Markings and Notices

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	
Pattern approval number for the instrument	NMI 6/4D/392
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 shown near the display of the result.

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

Note: For multi-interval instruments the markings shall be as above, with the exception that the `Maximum capacity' and `Verification scale interval' shall be marked for both interval ranges, e.g. as follows:

Maximum capacity Max ...../..... kg
Verification scale interval e = .../..... kg

1.9 Sealing Provision

Provision is made for the calibration and configuration to be sealed by setting a switch within the instrument to an OFF position, and then preventing access within the instrument housing.

It is possible to determine that the switch status is in the `OFF' position as follows:

- Exit the weighing mode.
- Launch the 'AD2000-demo Program'.
- Press the `START' button on the screen.
- If the switch is in the 'ON' position, the instrument will display `SPAN SW' next to the Weight Display. In this case the instrument should not be verified until the switch has been correctly located in the `OFF' position.
- Otherwise the instrument will display BLANK in which case the instrument may be verified.

Sealing to prevent access within the instrument housing may be achieved by using a destructible label placed over the cover plate underneath the instrument as shown in Figure 8.

1.10 Software

The instrument having its software separated into DIGI Windows based POS software and an application program developed by W W Wedderburn.

DIGI Windows based POS software is identified by the checksum number 41047A60. This software checksum number is displayed on the weighing instrument display (Figure 7a).

The ATRIA application program is designated WM 1.0 version 1.4. The Application program version is displayed at the bottom of the screen in the weighing mode (Figure 7b). See variant 6 for alternatives.

Both DIGI Windows based POS software and ATRIA application program are used for trade purpose.

2. Description of Variant 1 **approved on 15/11/19**

Certain other capacities of the Teraoka model RM-5900 series of multi-interval instruments as listed in Table 1 below (the pattern is shown in **bold**).

Table 1

Maximum Capacity *(Maxi / Max2)*	Minimum Capacity *(Min)*	Verification Scale Interval *(ei / e2)*	Maximum Subtractive Tare Capacity *(T = - ...)*
3 / 6 kg	0.02 kg	0.001 / 0.002 kg	2.999 kg
6 / 15 kg	**0.04 kg**	**0.002 / 0.005 kg**	**5.998 kg**
15 / 30 kg	0.100 kg	0.005 / 0.010 kg	14.995 kg

3. Description of Variant 2 approved on 15/11/19

The Teraoka model RM-5900 series of single interval instruments in certain capacities as listed in Table 2 below.

Table 2

Maximum Capacity *(Max)*	Minimum Capacity *(Min)*	Verification Scale Interval *(e)*	Maximum Subtractive Tare Capacity *(T = - ...)*
3 kg	0.020 kg	0.001 kg	1.499 kg
6 kg	0.040 kg	0.002 kg	2.998 kg
15 kg	0.100 kg	0.005 kg	7.495 kg
30 kg	0.200 kg	0.010 kg	14.99 kg

4. Description of Variant 3 approved on 15/11/19

The Teraoka model DIGI RM-5900 B (Figure 2) instruments which are similar to the pattern and variants 1 to 2 but having the customer display integrated within the instrument housing.

5. Description of Variant 4 approved on 15/11/19

Similar to the pattern and variants but fitted with a 350 mm x 260 mm scoop load receptor (Figure 3).

6. Description of Variant 5 approved on 15/11/19

The pattern and variants may have a `confectionary scoop' (Figure 4), `coffee scoop' (Figure 5), or `seafood scoop' (Figure 6) mounted on a modified platter via a support bracket. The size and weight of scoops are listed in Table 3 below.

Table 3 — Scoop details

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

7. Description of Variant 6 approved on 15/11/19

The pattern or variants may be fitted with an alternative `application program' interfaces to the legally relevant scale module software to initiate pre-set tare functions and to provide unit price information (including providing applicable pre-set tare and unit price values). The `application program' controls the instrument touch screen (other than the area controlled by the `legally relevant software' mentioned above), and the printing of label or transaction records. It may provide, or interface to, other software for the storage of product-look-up (PLU) data (including pre-set tare and unit price values), and other purposes.

7.1 Notes/Conditions:

- The legally relevant software must be provided.
- Only submittor-authorised application software is permitted.
- Regardless of the application software used, the instrument operation must comply with this approval and relevant NMI requirements.
- Totalisation of items shall not occur without a transaction being provided.

8. Description of Variant 7 approved on 15/11/19

The pattern or variants may be connected in a network with compatible approved Teraoka instruments, to share common PLU data, for totalisation across instruments (`floating system'), and to accumulate and retrieve management information.

In addition, the network may be interfaced with a computer for the collection of management data, or the downloading of PLU data.

Note 1: The weighing and price-computing functions of each weighing instrument in the network are independent, and the removal, repair or replacement of a particular weighing instrument does not necessitate reverification of any other weighing instrument in the network.

Note 2: The use of a totalisation across instruments (`floating system') arrangement in this variant is not approved for use in self-service arrangement.

9. Description of Variant 8 approved on 15/11/19

The pattern or variants may alternatively run the `Weigh only scale module' which is a component of DIGI Windows based POS software as the display (Figure 7c).

10. Description of Variant 9 provisionally approved on 09/11/21 approved on 16/02/24

This variant of Teraoka model RM-5900 instrument is a mass only non-automatic weighing instrument with a customer display and may be fitted with a scoop load receptor (Figure 9a).

The instrument is fitted with alternative model YT3128 main board.

The instrument is powered by either an ENG model 6A-401DB12 AC/DC power adaptor (Input: 100-240 V AC, 50/60 Hz, 1 A; Output: 12 V DC, 3 A as shown in Figure 9b) – the submittor should be consulted regarding the acceptability of alternative power supply units, or an optional 7.4 V DC rechargeable battery.

The instrument may be equipped with the following interfaces.

- Ethernet;
- USB;
- RS232;
- Cash drawer;
- WiFi; and
- Bluetooth.

10.1 Data Carrier

The instrument may also present the numeric value of the weighing result in a visual and machine readable form/image which carries text-based data.

The data carrier (e.g. QR code) shall comply with GS1 standard and can be read by specific optical scanners and/or mobile devices with inbuilt digital camera and specialised application software which displays the weighing result.

The data carrier shall contain sufficient information such that there are no mutual differences between the primary indication on the instrument and the decoded and formatted result indicated by any other device/system utilising the data carrier.

Note: This approval does not constitute or imply approval for these devices/systems.

(#) Data carrier test shall be carried out as a part of verification.

10.2 Software

The instrument is fitted with the following software (Figure 9c):

a) Android 5.1 operating system or higher;

b) Libwn.so scale software version 1.x.x.x, where x.x.x refers to the identification of non-legally relevant software; and

c) STE77 application software version 1.28.11.1 or greater.

The scale software version number, application software version number and hardware can be seen by pressing the VER number on the lower right of the operator display.

11. Description of Variant 10 **provisionally approved on 09/11/21**
approved on 16/02/24

The Teraoka model RM-5900 instrument which is similar to variant 9 but without a customer display. This variant has no visible TARE button and may also use data carrier (**) to present the numeric value of the weighing result, either used in a self-service arrangement or NOT FOR TRADING DIRECT WITH THE PUBLIC.

Note 1: The Zero key is available on the display, so as to ensure the zero condition can be reset.

Note 2: When used in a self-service arrangement, the following conditions apply.

- All keys on the touchscreen other than the ZERO key and software version are disabled or removed.
- The use of totalisation across instruments arrangement is not approved for use in self-service arrangements.
- The trader making the weighing instrument available for direct use by the public is responsible for ensuring the instrument is used correctly to achieve correct transaction measurements. Sufficiently clear instructions shall be given to the public (the operators) to enable them to correctly obtain a weight value.

(**) The data carrier shall comply with GS1 standard and can be read by specific optical scanners and/or mobile devices with inbuilt digital camera and specialised application software which displays the weighing result.

The data carrier shall contain sufficient information such that there are no mutual differences between the primary indication on the instrument and the decoded and formatted result indicated by any other device/system utilising the data carrier.

(#) Data carrier test shall be carried out as a part of verification.

TEST PROCEDURE No 6/4D/392

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 Schedule 1 of 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.

Additional Data Carrier Test

When the instrument also presents the weighing result in a QR code (Data carrier), the following procedures shall be carried out to ascertain that the displayed code represents the weighing result in the same unit of measurement as the primary indication on the instrument.

1) Place a load on the load receptor.
2) Use a suitable decoder (e.g. mobile phone camera and APP) to scan the QR code displayed on the instrument.
3) Confirm that the decoded weight value amount (unit of measurement is not transferred via the QR code) is the same as the primary indication on the instrument in the same unit of measurement (e.g. kg).
4) Repeat 1) to 3) twice with different test loads.

FIGURE 6/4D/392 – 1

(a) Teraoka Model DIGI RM-5900 Weighing Instrument (Operator side)

(b) Teraoka Model DIGI RM-5900 Weighing Instrument (Customer side)

FIGURE 6/4D/392 – 2

Teraoka Model DIGI RM-5900 Weighing Instrument (Variant 3)

FIGURE 6/4D/392 – 3

Teraoka Model DIGI RM-5900 Weighing Instrument with a Scoop Load Receptor (Variant 4)

FIGURE 6/4D/392 – 4

With a Typical Confectionary Scoop (Variant 5)

FIGURE 6/4D/392 – 5

With a Typical Coffee Bean Scoop (Variant 5)

FIGURE 6/4D/392 – 6

With a Typical Seafood Scoop (Variant 5)

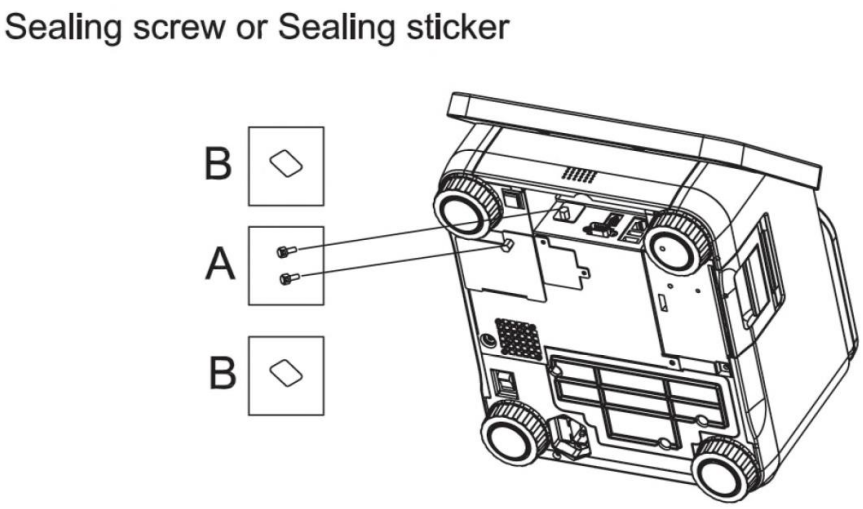
FIGURE 6/4D/392 – 7

(a) Legally Relevant Software

(b) ATRIA Application Program Version and Numbers

(c) Legally Relevant Software (Weigh only scale module)

FIGURE 6/4D/392 – 8

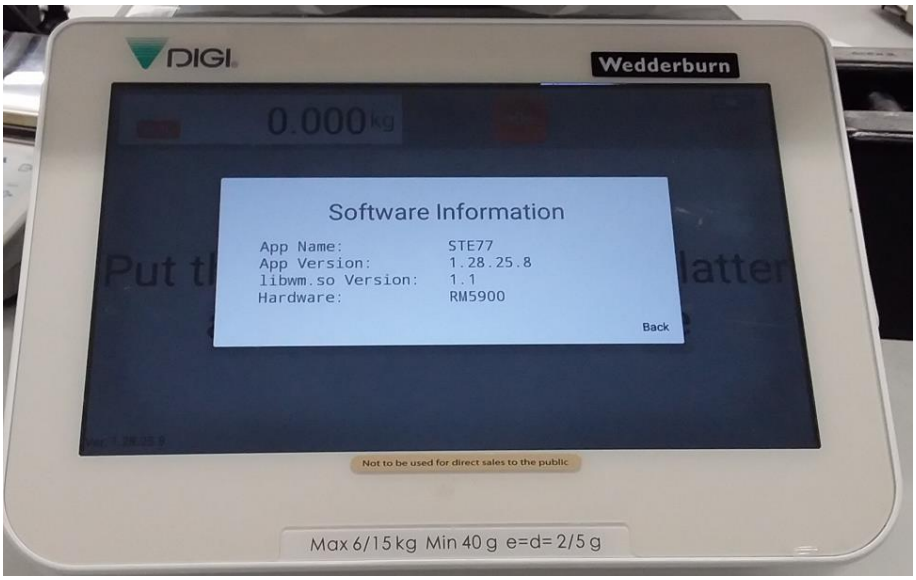


Typical Sealing

FIGURE 6/4D/392 – 9

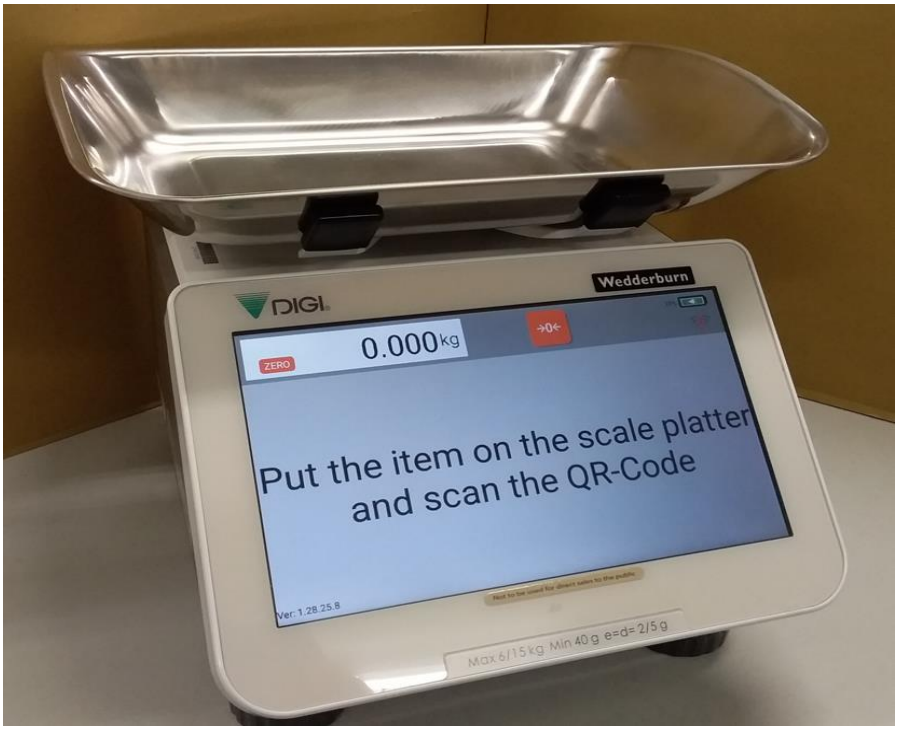
(a) Teraoka Model DIGI RM-5900 Weighing Instrument With QR Code (Variant 9)

(b) ENG Model 6A-401DB12 AC Power Adaptor



(c) Software Version

FIGURE 6/4D/392 – 10



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