Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/4D/390

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-5800 EV+ 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 October 2015.

This approval becomes subject to review on 1/11/24, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 21 approved – certificate issued	24/10/19

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4D/390' 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*.

Phillip Mitchell
Acting Manager
Policy and Regulatory
Services

TECHNICAL SCHEDULE No 6/4D/390

1. Description of Pattern approved on 24/10/19

A Teraoka model DIGI RM-5800 EV+ Class (III) non-automatic self-indicating price-computing multi-interval weighing instrument (Figure 1) with a verification scale interval (e_1) of 0.002 kg up to 6 kg and a verification scale interval (e_2) 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 an LCD colour touchscreen operator display/keyboard and an LCD colour customer display both mounted in an elevated position on a column. The operator touchscreen consists of displays for presentation of tare, weight, unit price and price information, zero, 'net' indicators and functions relating to product look up (PLU) items.

Instruments are fitted with an integral printer and a column mounted printer, for printing of labels and receipts (#).

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.

The instrument operates from mains AC power (240 V AC, 50 Hz).

(#) 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 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

Instruments 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 cash drawer, RS-232, USB and Ethernet 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	(III)
Pattern approval number for the instrument	NMI 6/4D/390
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*.

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 cover plate and ‘lead and wire’ type seal with drilled screws or using a destructible label placed over the cover plate beneath the platter or underneath the instrument as shown in Figure 17.

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 20a).

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 20b). See variant 19 for alternatives.

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

2. Description of Variant 1 approved on 24/10/19

Certain other capacities of the Teraoka model DIGI RM-5800 series of multi-interval instruments using a K type load cell as listed in Table 1 below (the pattern is shown in **bold**):

Table 1

Maximum Capacity (Max_1 / Max_2)	Minimum Capacity (Min)	Verification Scale Interval (e_1 / e_2)	Maximum Subtractive Tare Capacity (T = - …)
3/6 kg	0.020 kg	0.001/0.002 kg	2.999 kg
6/15 kg	**0.040 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 24/10/19

The Teraoka model DIGI RM-5800 series of single interval instruments using a K type load cell in certain capacities as listed in Table 2:

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	14.990 kg

4. Description of Variant 3 approved on 24/10/19

The Teraoka model DIGI RM-5800 series of single interval instruments fitted with a model STB-2236 A/D board in certain capacities as listed in Table 3:

Table 3

Maximum Capacity (*Max*)	Minimum Capacity (*Min*)	Verification Scale Interval (*e*)	Maximum Subtractive Tare Capacity (*T* = - …)
6 kg	0.020 kg	0.001 kg	2.999 kg
12 kg	0.040 kg	0.002 kg	5.998 kg
30 kg	0.100 kg	0.005 kg	14.995 kg

5. Description of Variant 4 approved on 24/10/19

The Teraoka model DIGI RM-5800 B instruments (Figure 2) which are similar to the pattern and variants 1 to 3 but fitted with one integral printer and having the operator display attached to the instrument and the customer display integrated within the main instrument housing.

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL B.

6. Description of Variant 5 approved on 24/10/19

The Teraoka model DIGI RM-5800 P instruments (Figure 3) which are similar to variant 4 but having a small customer display mounted on a column.

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL P.

7. Description of Variant 6 approved on 24/10/19

The Teraoka model DIGI RM-5800 BS instruments (Figure 4) which are similar to variant 4 but having the operator display mounted on a column above the weighing platform.

Instruments may be fitted with a lineless label printer. These instruments may also be known as DIGI model RM-5800LL BS.

8. Description of Variant 7 approved on 24/10/19

The Teraoka model DIGI RM-5800 EV-B instruments (Figure 5) which are similar to variant 6 but having a small customer display mounted in an elevated position on a column.

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL EV-B.

9. Description of Variant 8 approved on 24/10/19

The Teraoka model DIGI RM-5800 EV+B instruments (Figure 6) which are similar to variant 6 but having a large customer display mounted on a column.

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL EV+B.

10. Description of Variant 9 approved on 24/10/19

The Teraoka model DIGI RM-5800 EV instruments (Figure 7) which are similar to the pattern and variants 1 to 3 but having the operator display, a small customer display and the second printer all mounted on a split column.

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL EV.

11. Description of Variant 10 approved on 24/10/19

Certain other Teraoka model DIGI RM-5800 EV+ instruments (Figure 8) in certain capacities as listed in Tables 1 to 3 and having the operator display and customer display, and the second printer all mounted on a split column.

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL EV+.

12. Description of Variant 11 approved on 24/10/19

The Teraoka model DIGI RM-5800 EV-EL instruments (figure 9) which are similar to variant 9 but having an Elexy customer display.

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL EV-EL.

13. Description of Variant 12 approved on 24/10/19

The Teraoka model DIGI RM-5800 H instruments as a ‘Hanging’ style instrument which are similar to the pattern and variants 1 to 3 but having the operator display and printer mounted in the instrument housing with a suspended circular or rectangle load receptor (Figure 10).

Provision is made for sealing as shown in Figure 18.

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL H.

14. Description of Variant 13 approved on 24/10/19

The Teraoka model DIGI RM-5800 B ES instruments which are similar to the pattern but fitted with an external basework when the integral basework is either disabled

or removed. The approved external baseworks are listed in Tables 4 to 7 below using an M-Type load cell.

Instruments are marked ‘NOT FOR TRADING DIRECT WITH THE PUBLIC’ (or similar wording) unless the maximum capacity of the instrument is greater than 100 kg (i.e. as may be the case for Tables 4 to 6).

Instruments may be fitted with a lineless label printer. These instruments may also be known as model DIGI RM-5800LL B ES.

Table 4 – Single Interval S-SK Base works

Make	Teraoka		
Basework model	S-SK		
Platform size, mm	420 x 318		
Max, kg	30	60	150
e, kg	0.01	0.02	0.05
T, kg	14.99	29.98	74.95
Load cell make	Teraoka		
Load cell model	M–Type (MA)		
Load cell Emax, kg	45	90	225
No of load cell	1		
Load cell sensitivity at Emax	1.5mV/V		
Input impedance	430 Ω		
Excitation voltage (maximum)	20 V DC		
Cable length (#)	0.5 to 3.0 (#)		
No of leads (plus shield)	5		

Table 5 – Single Interval S-TK, S-YB Base works

Make	Teraoka					
Basework model	S-TK			S-YB		
Platform size, mm	520 x 415			480 x 480		
Max, kg	60	150	300	60	150	300
e, kg	0.02	0.05	0.1	0.02	0.05	0.1
T, kg	29.98	74.95	149.9	29.98	74.95	149.9
Load cell make	Teraoka					
Load cell model	M –Type (MB)					
Load cell Emax, kg	90	225	450	90	225	450

No of load cell	1
Load cell sensitivity at Emax	1.5mV/V
Input impedance	430 Ω
Excitation voltage (maximum)	20 V DC
Cable length (#)	0.5 to 3.0 (#)
No of leads (plus shield)	5

Table 6 – Single Interval S-QB and S-UK Base works

Make	Teraoka						
Basework model	S-QB				S-UK		
Platform size, mm	560 x 700				700 x 598		
Max, kg	60	150	300	600	60	150	300
e, kg	0.02	0.05	0.1	0.2	0.02	0.05	0.1
T, kg	29.98	74.95	149.9	299.8	29.98	74.95	149.9
Load cell make	Teraoka						
Load cell model	M –Type (MC)						
Load cell Emax, kg	90	225	450	900	90	225	450
No of load cell	1						
Load cell sensitivity at Emax	1.5mV/V						
Input impedance	430 Ω						
Excitation voltage (maximum)	20 V DC						
Cable length (#)	0.5 to 3.0 (#)						
No of leads (plus shield)	5						

Table 7 – Single Interval S-VK Base works

Make	Teraoka
Basework model	S-VK
Platform size, mm	700 x 598
Max, kg	600
e, kg	0.2
T, kg	149.9
Load cell make	Teraoka
Load cell model	M –Type (MD)
Load cell Emax, kg	900
No of load cell	1
Load cell sensitivity at Emax	1.5mV/V
Input impedance	430 Ω
Excitation voltage (maximum)	20 V DC
Cable length (#)	0.5 to 3.0 (#)
No of leads (plus shield)	5

Max = maximum capacity of the basework

e = verification scale interval

T = maximum subtractive tare capacity (*T* = - …)

(#) The load cell cable length supplied with the basework shall not be shortened.

15. Description of Variant 14 approved on 24/10/19

The Teraoka model DIGI RM-5800 instruments (Figure 11) which are similar to the pattern and variants 1 to 3 but having a slimmer shaped platform body and a small customer display without the integral printer.

Provision is made for sealing as shown in Figure 19.

16. Description of Variant 15 approved on 24/10/19

The Teraoka model DIGI RM-5800 PLUS instruments (Figure 12) which are similar to variant 14 but having a large customer display.

17. Description of Variant 16 approved on 24/10/19

The Teraoka model DIGI RM-5800 EL instruments (Figure 13) which are similar to variant 14 but having an Elexy customer display.

18. Description of Variant 17 approved on 24/10/19

The pattern or variants may have a ‘confectionary scoop’ (Figure 14), ‘coffee scoop’ (Figure 15), or ‘seafood scoop’ (Figure 16) mounted on a modified platter via a support bracket. The size and weight of scoops are listed in Table 8 below.

Table 8 – 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 (L)	406	296	702
Seafood	400 (L) x 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.

19. Description of Variant 18 approved on 24/10/19

The Pattern or variants may be fitted with one 10 or 12 or 15 inch operator display and/or one 7 or 10 or 12 or 15 inch customer display.

20. Description of Variant 19 approved on 24/10/19

The pattern or variants may be fitted with an alternative 'application program' interfaces to the 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.

20.1. Notes/Conditions

• The DIGI Windows based POS 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.

21. Description of Variant 20 approved on 24/10/19

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.

22. Description of Variant 21 approved on 24/10/19

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 20c).

TEST PROCEDURE No 6/4D/390

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.

FIGURE 6/4D/390 - 1

Teraoka Model DIGI RM-5800 EV+ Weighing Instrument (Pattern)
(Elevated displays version – operator side)

Teraoka Model DIGI RM-5800 EV+ Weighing Instrument (Pattern)
(Elevated displays version – customer side)

FIGURE 6/4D/390 – 2

Teraoka Model DIGI RM-5800 B/RM-5800 LL B (variant 4)

FIGURE 6/4D/390 – 3

Teraoka Model DIGI RM-5800 P/RM-5800 LL P (Variant 5)

FIGURE 6/4D/390 – 4

Teraoka Model DIGI RM-5800 BS/RM-5800 LL BS (Variant 6)

FIGURE 6/4D/390 – 5

Teraoka Model DIGI RM-5800 EV-B (RM-5800 LL EV-B) (Variant 7)

FIGURE 6/4D/390 – 6

Teraoka Model DIGI RM-5800 EV+B/RM-5800 LL EV+B (Variant 8)

FIGURE 6/4D/390 – 7

Teraoka Model DIGI RM-5800 EV/RM-5800 LL EV (Variant 9)

FIGURE 6/4D/390 – 8

Teraoka Model DIGI RM-5800 EV+/RM-5800 LL EV+ (Variant 10)

FIGURE 6/4D/390 – 9

Teraoka Model DIGI RM-5800 EV-EL/RM-5800 LL EV-EL (Variant 11)

FIGURE 6/4D/390 – 10

Teraoka Model DIGI RM-5800 H (RM-5800 LL H) (Variant 12)

FIGURE 6/4D/390 – 11

Teraoka Model DIGI RM-5800 (Variant 14)

FIGURE 6/4D/390 – 12

Teraoka Model DIGI RM-5800 PLUS (Variant 15)

FIGURE 6/4D/390 – 13

Teraoka Model DIGI RM-5800 EL (Variant 16)

FIGURE 6/4D/390 – 14

Teraoka Model DIGI RM-5800 series with ‘confectionary scoop’
(Variant 17)

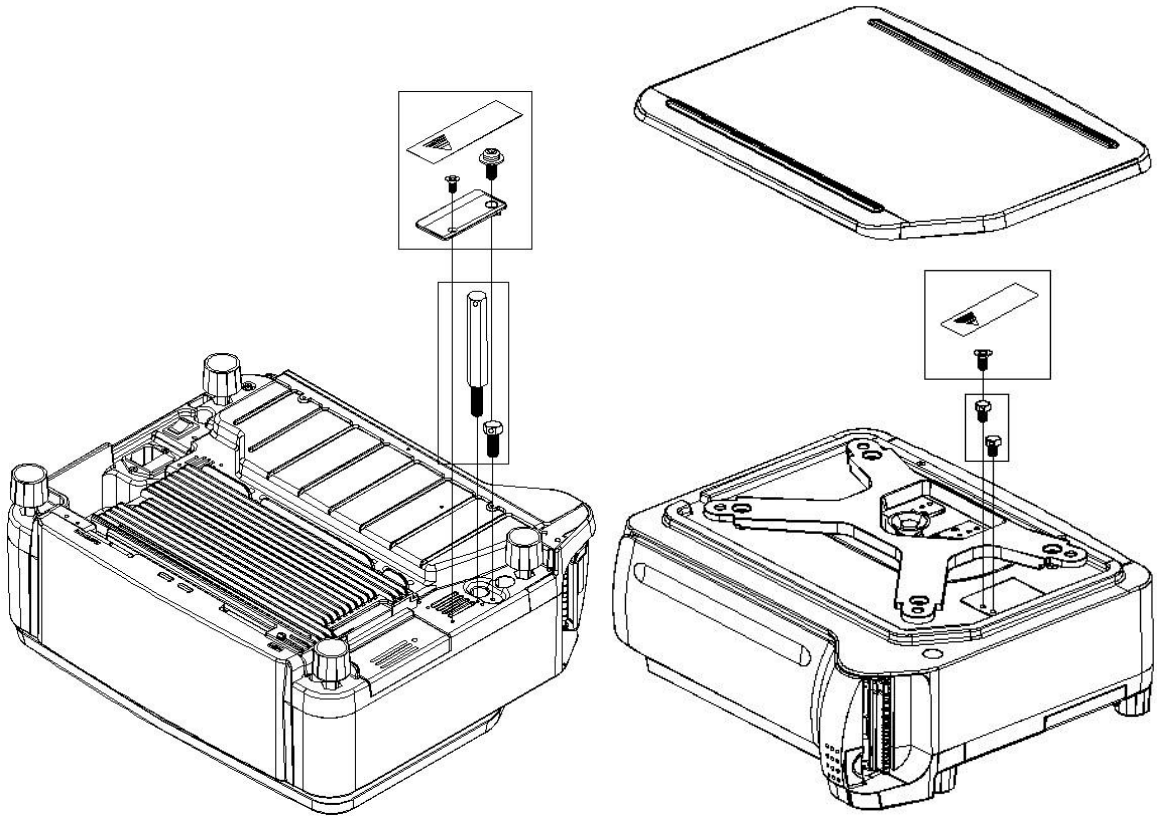
FIGURE 6/4D/390 – 15

Teraoka Model DIGI RM-5800 series with ‘coffee scoop’ (Variant 17)

FIGURE 6/4D/390 – 16

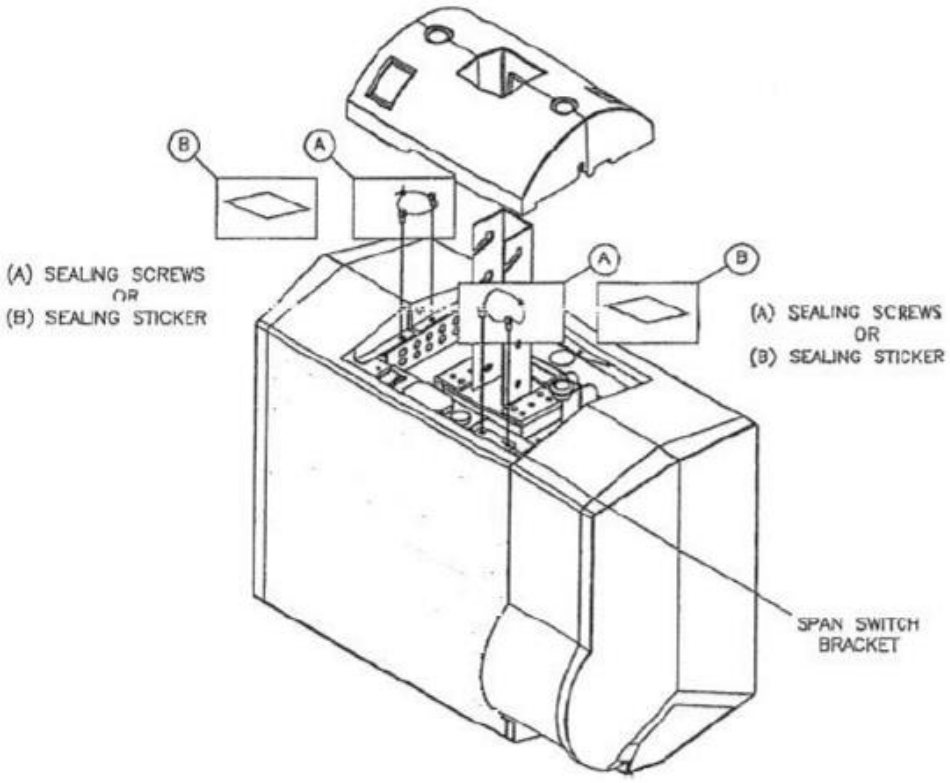
Teraoka Model DIGI RM-5800 series with ‘seafood scoop’ (Variant 17)

FIGURE 6/4D/390 – 17



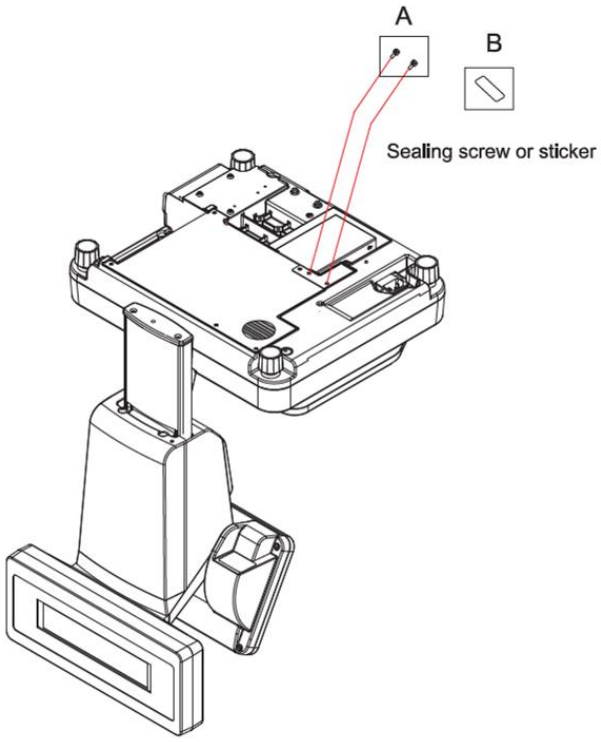
Typical Sealing of models RM-5800 B, RM-5800 P, RM5800 BS, RM-5800 EV-B, RM-5800 EV+B, RM-5800 EVEL and RM-5800 ES

FIGURE 6/4D/390 – 18



Typical Sealing of model RM-5800 H

FIGURE 6/4D/390 – 19



Typical Sealing of RM-5800, RM-5800 PLUS and RM-5800 EL

FIGURE 6/4D/390 – 20

(a) Legally Relevant Software

(b) ATRIA Application Program Version

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

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