



# NATIONAL STANDARDS COMMISSION

6/4D/236

20/10/87

## NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

### REGULATION 9

#### CERTIFICATE OF APPROVAL No 6/4D/236

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

Teraoka Seiko Model SM-60 Weighing Instrument

submitted by J W Wedderburn & Sons Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130.

#### CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/8/90.  
This approval expires in respect of new instruments on 1/8/91.

Instruments purporting to comply with this approval shall be marked NSC No 6/4D/236.

This approval may be withdrawn if instruments are constructed other than in accordance with the drawings and specifications lodged with the Commission.

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

Signed

Executive Director

#### Descriptive Advice

Pattern: approved 11/7/85

- A dual-interval self-indicating price-computing weighing instrument with 0.002 kg verification scale intervals up to 6 kg and with 0.005 kg verification scale intervals from 6 kg up to the maximum capacity of 15 kg.

Variant: approved 11/7/85

1. With the load cell and mounting in an alternative housing.

Technical Schedule No 6/4D/236 describes the pattern and variant 1.

Variant: approved 22/12/86

2. With an alphanumeric commodity display for price-look-up (PLU) descriptions and display of unweighed item calculations. Known as model SM-60A.

.... /2

Variants: approved 17/7/87

3. With single-interval operation with a maximum capacity of 15 kg and with a verification scale interval of 0.005 kg.
4. The model SM60 or SM60A instrument as single-interval instruments with baseworks and capacities as listed in Table 1.
5. With an additional price-look-up (PLU) selection keyboard.
6. Displaying mass only.
7. With the instruments connected in a network.

Technical Schedule No 6/4D/236 Variation No 1 describes variants 2 to 7.

Filing Advice

Certificate of Approval No 6/4D/236 dated 20/2/86 is superseded by this Certificate and may be destroyed.

Note: In Technical Schedule No 6/4D/236 dated 20/2/86, amend references to the tare capacity given in clauses 1.3 and 1.4, to read: "0.748 kg".

The documentation for this approval now comprises:

Certificate of Approval No 6/4D/236 dated 20/10/87  
Technical Schedule No 6/4D/236 dated 20/2/86  
Technical Schedule No 6/4D/236 Variation No 1 dated 20/10/87  
(incl. Table 1)  
Test Procedure No 6/4D/236 dated 20/2/86  
Figure 1 dated 20/2/86  
Figure 2 dated 20/10/87



# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 6/4D/236

Pattern: Teraoka Seiko Model SM-60 Weighing Instrument

Submitter: J W Wedderburn & Sons Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130

### 1. Description of Pattern

A dual-range self-indicating price-computing label or ticket printing weighing instrument (Figure 1) of 15 kg maximum capacity with 0.002 kg scale intervals up to 6 kg and with 0.005 kg scale intervals from 6 kg up to 15 kg. The instrument has a price-look-up (PLU) facility, unit price up to \$999.99/kg and price to \$9999.99. The instrument may be fitted with output sockets for the connection of peripheral and/or auxiliary devices.

A number of SM-60 instruments can be interconnected to allow them to share common PLU data.

#### 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 Display Check

A display check is initiated whenever power is applied.

#### 1.3 Tare

A semi-automatic taring device of up to 0.746 kg capacity may be fitted.

#### 1.4 Markings

The instrument is marked with the following data, together in one location:

Manufacturer's name or mark

Serial number

NSC approval number

Accuracy class

NSC No 6/4D/236

(III)

Low range

Maximum capacity

Verification scale interval

Max 6 kg \*

$e = d = 0.002$  kg \*

High range

Maximum capacity

Verification scale interval

Max 15 kg \*

$e = d = 0.005$  kg \*

Minimum capacity

Maximum subtractive tare

Min 0.04 kg \*

T = -0.746 kg

\* These markings are repeated close to each reading face.

1.5 Levelling

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

1.6 Verification Provision

Provision is made for a verification mark to be applied.

2. Description of Variant 1

With the weighing unit (load cell and mounting) in an alternative housing.

TEST PROCEDURE No 6/4D/236

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 error applicable is that for the range in which the measurement is made, using the scale interval of the range.

The maximum permissible errors are:

- $\pm 0.5e$  for loads between 0 and 500e;
- $\pm 1.0e$  for loads between 501e and 2000e; and
- $\pm 1.5e$  for loads above 2000e.

1. Zero Test

As the automatic device 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 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 ( $\pm 2\%$  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 6 steps increasing to maximum capacity, followed by decreasing loads in not less than 6 steps to zero load. The loads should be selected such that there are 3 approximately equal steps in each range, but avoiding the changeover point of the ranges.

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.

5. Taring

The 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

6/4D/236  
20/10/87

## TECHNICAL SCHEDULE No 6/4D/236

### VARIATION No 1

Pattern: Teraoka Seiko Model SM-60 Weighing Instrument

Submitter: J W Wedderburn & Sons Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130

#### 1. Description of Variants

##### 1.1 Variant 2

With an alphanumeric commodity display for price-look-up (PLU) descriptions and display of unweighed item calculations. Known as the model SM-60A (Figure 2).

##### 1.2 Variant 3

With single-interval operation with a maximum capacity of 15 kg and with a verification scale interval of 0.005 kg. A subtractive, semi-automatic taring device of up to 0.745 kg may be fitted.

##### 1.3 Variant 4

The model SM-60 or SM-60A as single-interval instruments with baseworks and capacities as listed in Table 1.

##### 1.4 Variant 5

The model SM-60A with an additional price-look-up (PLU) selection keyboard and print button located adjacent to the instrument display, and then known as a model SM-60B. When used for self-service operation all other buttons are covered and hence the tare facility (if fitted) is not operational.

##### 1.5 Variant 6

The instrument as a mass only weighing instrument i.e. without price-computing.

##### 1.6 Variant 7

A number of SM-60, SM-60A, or SM-60B instruments may be connected in a network, to share common PLU data, to transfer transaction data between instruments, and to retrieve management information.

Each individual instrument within the network has the facility for the transaction data to be entered into one of a number of operator memories, with a total ticket being produced at the end of a number of transactions.

In such a system it is essential that the purchaser be provided with a ticket, or tickets, indicating each item in the transaction and the total price for the transaction.

The linking of these instruments in a network allows such transaction data to be transferred between instruments.

A number of Teraoka Seiko model SM-40 or SM-50 weighing instruments may also be included as part of the network. These instruments are described in the documentation of NSC approval No 6/4D/216.

The network must include at least one of the following as the network controller - SM-60, SM-60A, SM-60B, CB-10 (the CB-10 is a "control box" - it is not a weighing instrument). In addition the network may be interfaced with a computer for the collection of management data, or the downloading of PLU programming data.

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

TABLE 1

Maximum capacity	30 kg	60 kg	150 kg	300 kg	600 kg
Minimum capacity	0.2 kg	0.4 kg	1 kg	2 kg	4 kg
Verification scale interval	0.01 kg	0.02 kg	0.05 kg	0.1 kg	0.2 kg
Maximum tare capacity	9.99 kg	29.98 kg	59.95 kg	99.90 kg	299.8 kg
Basework models	S-DK DS-410	S-BK S-CK S-DK DS-410	S-BK S-CK DS-410	S-BK S-CK	S-EK
Load cell model	RN 31 (#)	RW 60	RW 150	RW 300	RW 600

Note: The DS-410 style baseworks are as described in the documentation of NSC approval No 6/9C/202.

(#) Also known as a model RW 30.

# National Standards Commission



## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/236

CHANGE No 1

The following change is made to the approval documentation for the

Teraoka Seiko Model SM-60 Weighing Instrument

submitted by    W W Wedderburn Pty Ltd  
                      90 Parramatta Road  
                      Summerhill NSW 2130.

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.

A handwritten signature in black ink, appearing to read 'J. Birch'.

In Technical Schedule No 6/4D/236 Variation No 1 dated 20/10/87, Table 1 is amended by adding the model S-A basework to the approved models of 30 kg capacity.



# National Standards Commission



## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/236

CHANGE No 2

The following change is made to the approval documentation for the

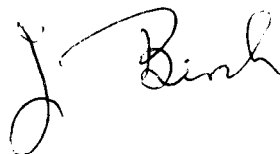
Teraoka Seiko Model SM-60 Weighing Instrument

submitted by W W Wedderburn Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130.

In Certificate of Approval No 6/4D/236 dated 20/10/87, the Condition of Approval referring to the expiry of the approval should be amended to now read;

"This approval expires in respect of new instruments on 1/8/92."

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.



# National Standards Commission



## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/236

CHANGE No 3

The following change is made to the approval documentation for the

Teraoka Seiko Model SM-60 Weighing Instrument

submitted by W W Wedderburn Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130.

In Certificate of Approval No 6/4D/236 dated 20/10/87, the Condition of Approval referring to the expiry of the approval (previously amended by Notification of Change No 2 dated 17/9/91) should be amended to now read:

"This approval expires in respect of new instruments on 1/4/93."

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

# National Standards Commission



## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/236

CHANGE No 4

The following change is made to the approval documentation for the

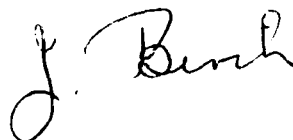
Teraoka Seiko Model SM-60 Weighing Instrument

submitted by    W W Wedderburn Pty Ltd  
                      90 Parramatta Road  
                      Summer Hill    NSW    2130.

In Certificate of Approval No 6/4D/236 dated 20/10/87, the Condition of Approval referring to the expiry of the approval (previously amended by Notification of Change No 3 dated 28/9/92) should be amended to now read:

"This approval expires in respect of new instruments on 31/12/93."

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



# National Standards Commission



## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/236

CHANGE No 5

The following change is made to the approval documentation for the

Teraoka Seiko Model SM-60 Weighing Instrument

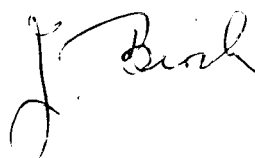
submitted by W W Wedderburn Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130.

In Certificate of Approval No 6/4D/236 dated 20/10/87, the Condition of Approval referring to the expiry of the approval (previously amended by Notification of Change No 4 dated 1/4/93) should be amended to now read:

"This approval expires in respect of new instruments on 30/6/94."

NOTE: The Commission does not allow the load cells specified in overhead weighing instrument approvals to be replaced by any other cell even if that replacement cell has a Supplementary Certificate of Approval. Only the Teraoka Seiko model RW-300 or RW-600 load cells shall be used in model DS-260 overhead weighing instruments. (The Supplementary approval (NSC No S167) for the RW series load cells has expired, however this does not effect their use in these instruments.)

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



## National Standards Commission



### NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/236

CHANGE No 6

The following change is made to the approval documentation for the

Teraoka Seiko Model SM-60 Weighing Instrument

submitted by W W Wedderburn Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130.

In Certificate of Approval No 6/4D/236 dated 20 October 1987, the Condition of Approval referring to the expiry of the approval (previously amended by Notification of Change No 5 dated 30 December 1993) should be amended to now read:

"This approval expires in respect of new instruments on 1 July 1995."

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

A handwritten signature in black ink, appearing to read 'J. Birch'.

# National Standards Commission



## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/236

CHANGE No 7

The following change is made to the approval documentation for the

Teraoka Seiko Model SM-60 Weighing Instrument

submitted by W W Wedderburn Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130.

In Certificate of Approval No 6/4D/236 dated 20 October 1987, the Condition of Approval referring to the expiry of the approval (previously amended by Notification of Change No 6 dated 21 December 1994) should be amended to now read:

"This approval expires in respect of new instruments on 1 October 1995."

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



## National Standards Commission



### NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/236

CHANGE No 8

The following change is made to the approval documentation for the

Teraoka Seiko Model SM-60 Weighing Instrument

submitted by W W Wedderburn Pty Ltd  
90 Parramatta Road  
Summer Hill NSW 2130.

In Certificate of Approval No 6/4D/236 dated 20 October 1987, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 1 January 1996."

NOTE: This was previously amended by Notification of Change No 7 dated 21 July 1995.

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

A handwritten signature in black ink, appearing to be 'J. H. H. H.', written in a cursive style.

FIGURE 6/40/236 - 1



Terooka Seiko Model SM-60



FIGURE 6/40/236 - 2



Terooka Seiko SM-60A