

National Standards Commission



Certificate of Approval

No 6/9C/202

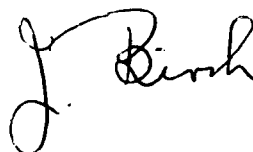
Issued under Regulation 9
of the
National Measurement (Patterns of Instruments) Regulations

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

Teraoka Seiko Model DS-410 Weighing Instrument

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



CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/10/91

This approval expires in respect of new instruments on 1/10/92.

Instruments purporting to comply with this approval shall be marked NSC No 6/9C/202 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 drawings and specifications lodged with the Commission 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 the Commission's Document 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to the instrument shall be within the limits specified herein and in any approval documentation for the components where they are approved separately.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

The pattern as approved herein or with substitute load cells and/or indicator, and in other capacities, shall comply with General Certificate No 6B/0.

DESCRIPTIVE ADVICE

Pattern: approved 30/9/86

- . A Teraoka Seiko model DS-410 dual-interval weighing instrument of 150 kg maximum capacity.

Variant: approved 30/9/86

1. As single-interval instruments in capacities up to 600 kg.

Technical Schedule No 6/9C/202 describes the pattern and variant 1.

Variant: approved 21/7/89

2. A dual-interval instrument of 60 kg maximum capacity.

Technical Schedule No 6/9C/202 Variation No 1 describes variant 2.

Variant: approved 26/7/91

3. A dual-interval instrument of 30 kg maximum capacity.

Technical Schedule No 6/9C/202 Variation No 2 describes variant 3.

FILING ADVICE

Certificate of Approval No 6/9C/202 dated 4/10/89 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 6/9C/202 dated 30/8/91
Technical Schedule No 6/9C/202 dated 15/12/86 (incl. Table 1 and Test
Procedure)
Technical Schedule No 6/9C/202 Variation No 1 dated 4/10/89
Technical Schedule No 6/9C/202 Variation No 2 dated 30/8/91
Figures 1 and 2 dated 15/12/86



NATIONAL STANDARDS COMMISSION

6/9C/202
15/12/86

TECHNICAL SCHEDULE No 6/9C/202

Pattern: Teraoka Seiko Model DS-410 Weighing Instrument.

Submittor: J W Wedderburn & Sons Pty Ltd
90 Parramatta Road
SUMMER HILL NSW 2130.

1. Description of Pattern

A self-indicating dual-interval weighing instrument with a verification scale interval of 0.02 kg up to 60 kg capacity and with a verification scale interval of 0.05 kg from 60 kg up to the maximum capacity of 150 kg (Figure 1).

The instrument may be fitted with an output socket for the connection of a peripheral or an auxiliary device.

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 is reset by use of the zero button.

1.2 Display Check

A display check is initiated whenever power is applied from the power supply and the ON/ZERO button is pressed.

1.3 Tare

A semi-automatic subtractive taring device of up to 59.98 kg capacity may be fitted.

1.4 Basework

The basework (Figure 2) has a Teraoka model RW 150 load cell of 150 kg capacity mounted directly between the main frame and the weighing platform frame. The maximum platform dimensions are 414 mm x 414 mm.

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1.5 Markings

Instruments are marked with the following data, together in one location:

Manufacturer's name or mark	
Serial number	
NSC approval number	NSC No 6/9C/202
Accuracy class	(III)
High Range	
Maximum capacity	Max 150 kg *
Verification scale interval	e=d= 0.05 kg *
Low Range	
Maximum capacity	Max 60 kg *
Verification scale interval	e=d= 0.02 kg *
Minimum capacity	Min 0.4 kg *
Maximum subtractive tare	T= - 59.98 kg

* These markings are repeated adjacent to each reading face if not already in that vicinity.

1.6 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.

1.7 Verification Provision

Provision is made for a verification mark to be applied.

2. Description of Variant 1

As single-interval instruments in capacities up to 600 kg, with the baseworks and load cells as listed in Table 1.

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	30 kg	60 kg	99.95 kg	300 kg	600 kg
Basework models	S-DK	S-BK	S-BK	S-BK	S-EK
	DS-410	S-CK	S-CK	S-CK	
		S-DK	DS-410		
		DS-410			
Load cell model	RN 31 (*)	RW 60	RW 150	RW 300	RW 600
Load cell capacity	30 kg	60 kg	150 kg	300 kg	600 kg

(*) Also known as a model RW 30.

Approved Models and Capacities

TEST PROCEDURE No 6/9C/202

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;
- + 1.0e for loads between 501e and 2000e; and
- + 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. The maximum amount of zero range adjustment available should be no more than 3/4 (of the 4% range) in one direction and 1/4 in the other.

3. Load Test

(a) Dual-interval Instruments

Test loads are to be applied 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.

(b) Single-interval Instruments

Test loads are to be applied increasing in not less than 5 approximately equal steps to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps to zero load.

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) Below zero the display may show a mass preceded by a minus sign.

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

6/9C/202

4/10/89

TECHNICAL SCHEDULE No 6/9C/202

VARIATION No 1

Pattern: Teraoko Seiko Model DS-410 Weighing Instrument.

Submittor: W W Wedderburn Pty Ltd
(formerly J W Wedderburn & Sons Pty Ltd)
90 Parramatta Road
Summer Hill NSW 2130.

1. Description of Variant 2

A Teraoko Seiko model DS-410 dual-interval weighing instrument with a verification scale interval of 0.01 kg up to 30 kg capacity and with a verification scale interval of 0.02 kg from up to 30 kg the maximum capacity of 60 kg.

The instrument is fitted with a Teraoka model RW-60 load cell of 60 kg capacity and may have a semi-automatic taring device of up to 29.99 kg capacity.



6/9C/202
30/8/91

National Standards Commission

TECHNICAL SCHEDULE No 6/9C/202

VARIATION No 2

Pattern: Teraoka Seiko Model DS-410 Weighing Instrument.

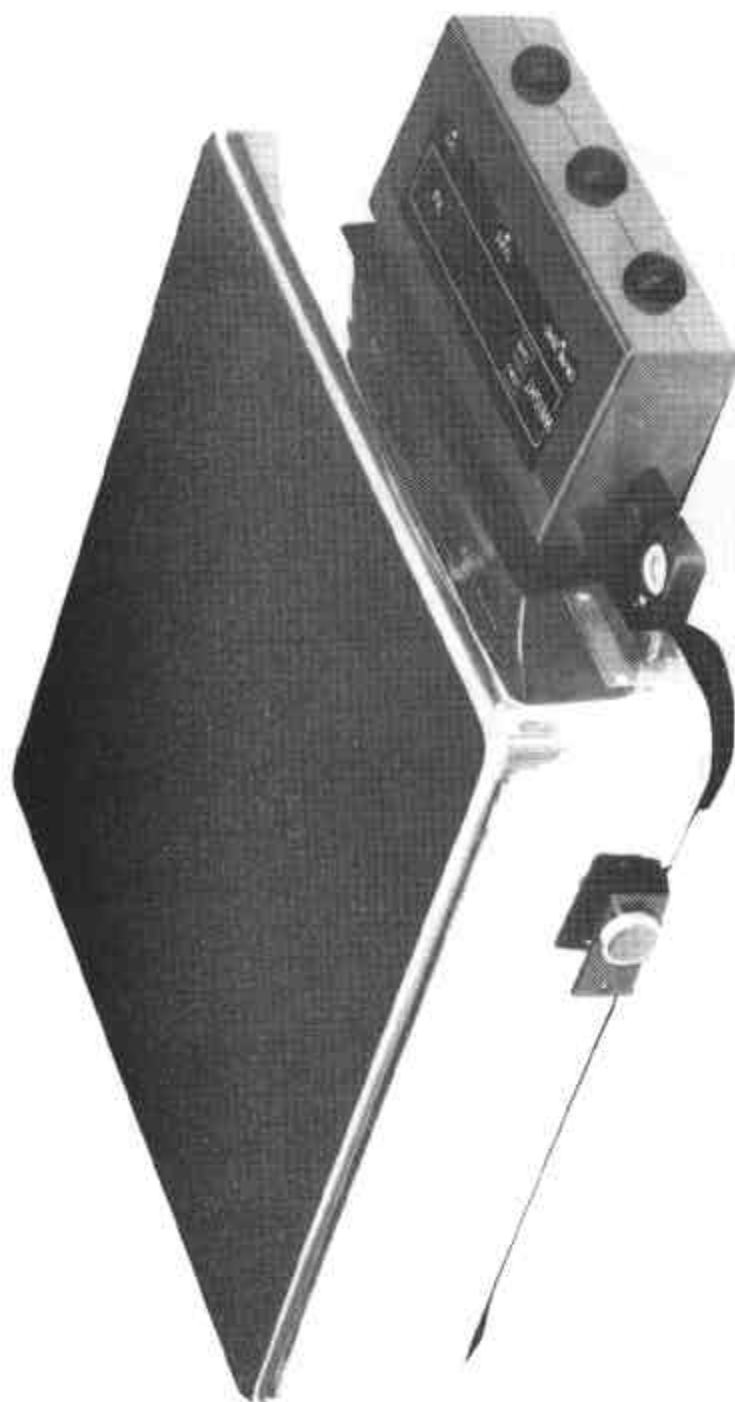
Submittor: W W Wedderburn Pty Ltd
90 Parramatta Road
Summer Hill NSW 2130.

1. Description of Variant 3

A Teraoka Seiko model DS-410 dual-interval weighing instrument with a verification scale interval of 0.005 kg up to 15 kg capacity and with a verification scale interval of 0.01 kg from 15 kg up to the maximum capacity of 30 kg.

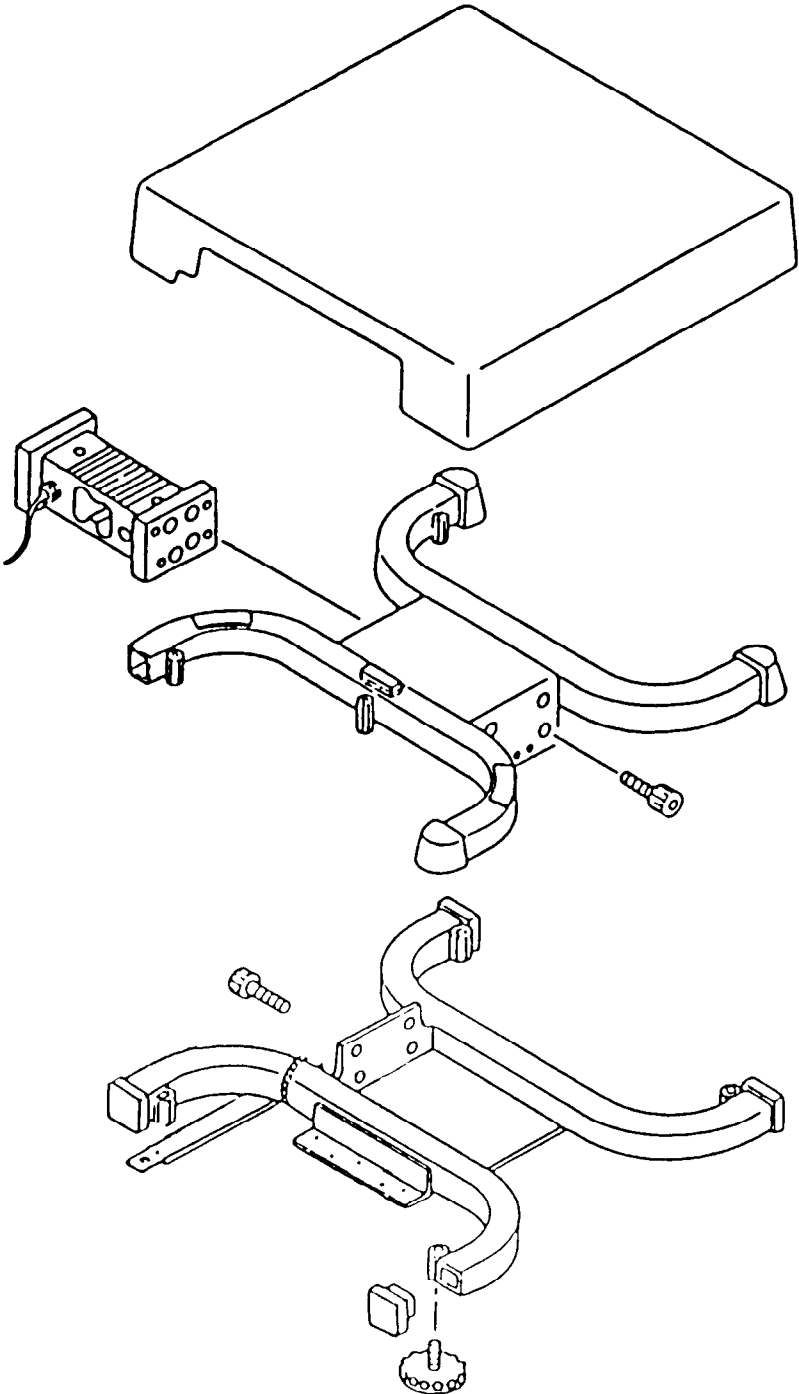
The instrument is fitted with a Teraoka model RN 31 load cell of 30 kg capacity and may have a semi-automatic taring device of up to 9.995 kg capacity.

FIGURE 6/9C/202 - 1



Teraoka Seiko DS-410 Weighing Instrument

FIGURE 6/9C/202 - 2



Basework Construction