CANCELLED

NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/4D/211

This is to certify that an approval has been granted by the Commission that the pattern and variants of the

Avery Model 1780 Price-Computing Weighing Instrument

submitted by Avery Australia Ltd,
3-5 Birmingham Avenue,
Villawood, New South Wales, 2163,

are suitable for use for trade.

The approval of the pattern and variants is subject to review on or after 1/8/87.

All instruments purporting to comply with this approval shall be marked NSC No 6/4D/211.

Relevant drawings and specifications are lodged with the Commission.

Signed

Executive Director

Descriptive Advice

Pattern: approved 14/7/82

. Avery model 1780 price-computing weighing instrument.

Variants: approved 14/7/82

1. With semi-self-cancelling tare replacing the semi-automatic self-cancelling tare.

2. With subtractive tare replacing the additive tare.

Technical Schedule No 6/4D/211 dated 3/8/82 describes the pattern and variants 1 and 2.

Filing Advice

The documentation for this approval comprises:

Certificate of Approval No 6/4D/211 dated 3/8/82
Technical Schedule No 6/4D/211 dated 3/8/82 (including Table 1)
Test Procedure No 6/4D/211 dated 3/8/82.

3/8/82

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/211

Pattern: Avery Model 1780 Price-Computing Weighing Instrument

Submittor: Avery Australia Ltd,
3-5 Birmingham Avenue,
Villawood, New South Wales, 2163.

1. Description of Pattern

Avery model 1780 self-indicating price-computing weighing instrument (Figures 1 and 2).

Capacity	14.995 kg
Scale interval	0.005 kg
Unit price	to $99.99/kg in 1c increments
Price	to $1499.35 in 1c increments

1.1 Zero

Zero within 0.25e, indicated by the ZERO light being lit, is obtained either semi-automatically, using the PRESS TO BALANCE button or automatically, whenever the instrument comes to rest within 0.5e of zero.

1.2 Tare

The semi-automatic PRESS TO TARE button allows taring of a mass on the load receptor to within 0.25e and is indicated by the TARE and ZERO lights being lit.

Tare is self-cancelling i.e. upon removal of the tared mass the entered tare will automatically cancel, whether or not a weighing has been completed.

Tare is additive and has a maximum capacity of 0.750 kg.

1.3 Display Check

Operation of the DISPLAY CHECK toggle switch, located under the instrument front panel, will cause each display to show ALL EIGHTS and the TARE and ZERO lights to illuminate, followed by the display blanking before returning to normal operation.

1.4 Levelling

There are four adjustable feet. Adjacent to the level indicator is a notice advising that the instrument must be level when in use.

1.5 Marking

The instrument nameplate is marked with the following data (Figure 3):

Manufacturer's name or mark	
Serial number	
NSC approval number	NSC No 6/4D/211
Accuracy class	(III)
Maximum capacity	Max 14.995 kg*
Minimum capacity	Min 0.100 kg*
Verification scale interval	e = d = 0.005 kg*
Maximum additive tare	T = + 0.750 kg

* These markings are repeated in the vicinity of each reading face.

1.6 Sealing

(a) A sealing plug is provided under the load receptor (Figure 3).

(b) A stamping plug is provided under the front of the cabinet (Figure 1).

2. Description of Variants

2.1 Variant 1

With semi-self-cancelling tare replacing the semi-automatic self-cancelling tare.

Tare is cancelled only when a mass has been weighed and then removed.

2.2 Variant 2

With subtractive tare replacing the additive tare, and with a capacity of 0.750 kg.

2.2.1 Range of Indication

The maximum gross mass indicated should not exceed the marked maximum capacity (Max) by more than 10e; above this the indicator should blank.

2.2.2 Marking

The marking for tare should read:

Maximum subtractive tare T = - 0.750 kg.

TABLE 1

Indicated Mass	Price/kg	Price
kg	$	$
0	0	0
0.100	99.99	10.00
0.105	98.99	10.39
0.110	97.99	10.78
0.120	96.99	11.64
0.130	95.99	12.48
0.140	94.99	13.30
0.150	93.99	14.10
0.160	92.99	14.88
0.170	91.99	15.64
0.180	90.96	16.37
0.190	89.88	17.08
0.200	79.77	15.95
0.300	69.66	20.90
0.400	59.55	23.82
0.500	49.44	24.72
0.600	39.33	23.60
0.700	29.22	20.45
0.800	19.11	15.29
0.900	9.14	8.23
1.000	30.57	30.57
2.000	70.03	140.06
3.000	84.67	254.01
4.000	92.00	368.00
5.000	95.00	475.00
6.000	97.00	582.00
7.000	99.00	693.00
8.000	99.50	796.00
9.000	99.99	899.91
10.000	99.99	999.90
11.000	99.99	1099.89
12.000	99.99	1199.88
13.000	99.99	1299.87
14.000	99.99	1399.86
14.995	99.99	1499.35

Test Procedure - 14.995 kg Instrument with Unit Price to $99.99/kg and Total Price to $1499.35

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;
± 1e for loads between 501e and 2000e; and
± 1.5e for loads above 2000e.

1. Zero Test

(a) Check using Document 104 that when the ZERO light is illuminated, zero is set to within 0.25e.

(b) As the automatic device resets zero when the weighing mechanism is in equilibrium within 0.5 scale interval of zero, zero should be checked, with a load of say, 10 scale intervals on the load receptor. The indications with 0.25e and 0.75e additional mass on the receptor will then be 10e and 11e respectively.

2. Zero Range

The maximum range of operation of the zero device should not exceed 4% of the capacity of the instrument (± 2% approximately). Satisfactory setting may be checked by the following method:

(a) With zero balance indicated apply a load of, say, 2.5% of maximum capacity to the instrument and attempt to zero the instrument; the instrument should not re-zero.

(b) Reduce the load to, say, 1.5% of maximum capacity and again attempt to zero the instrument; the instrument should indicate zero balance.

3. Range of Indication

(a) The maximum mass indicated should not exceed the maximum capacity by more than 10 scale intervals; above this, the indicator should be blank.

(b) The minimum mass indicated should be zero; below this the indication should be blank.

4. Taring

The tare function should reset the mass indicator to zero within 0.25e at any load within its tare capacity. This may be checked as described for Zero Test - 1(a).

Attempt to tare a mass above maximum tare capacity. The mass indicator should not reset to zero nor should the tare and zero indicators illuminate, that is, a tare should not have been entered. On removal of the mass the indicator should display all zeroes.

5. Test Loads

(a) Test loads are to be applied to the complete weighing instrument increasing in not less than 5 approximately equal steps to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps.

(b) In addition, where the instrument is fitted with additive tare, tare a mass equal to maximum tare capacity and proceed as in (a).

7. Level Sensitivity

As the automatic zero device may prevent the zero from changing when the instrument is tilted at zero load, the effect of tilt should be initially checked with a small load on the instrument, say, 10e.

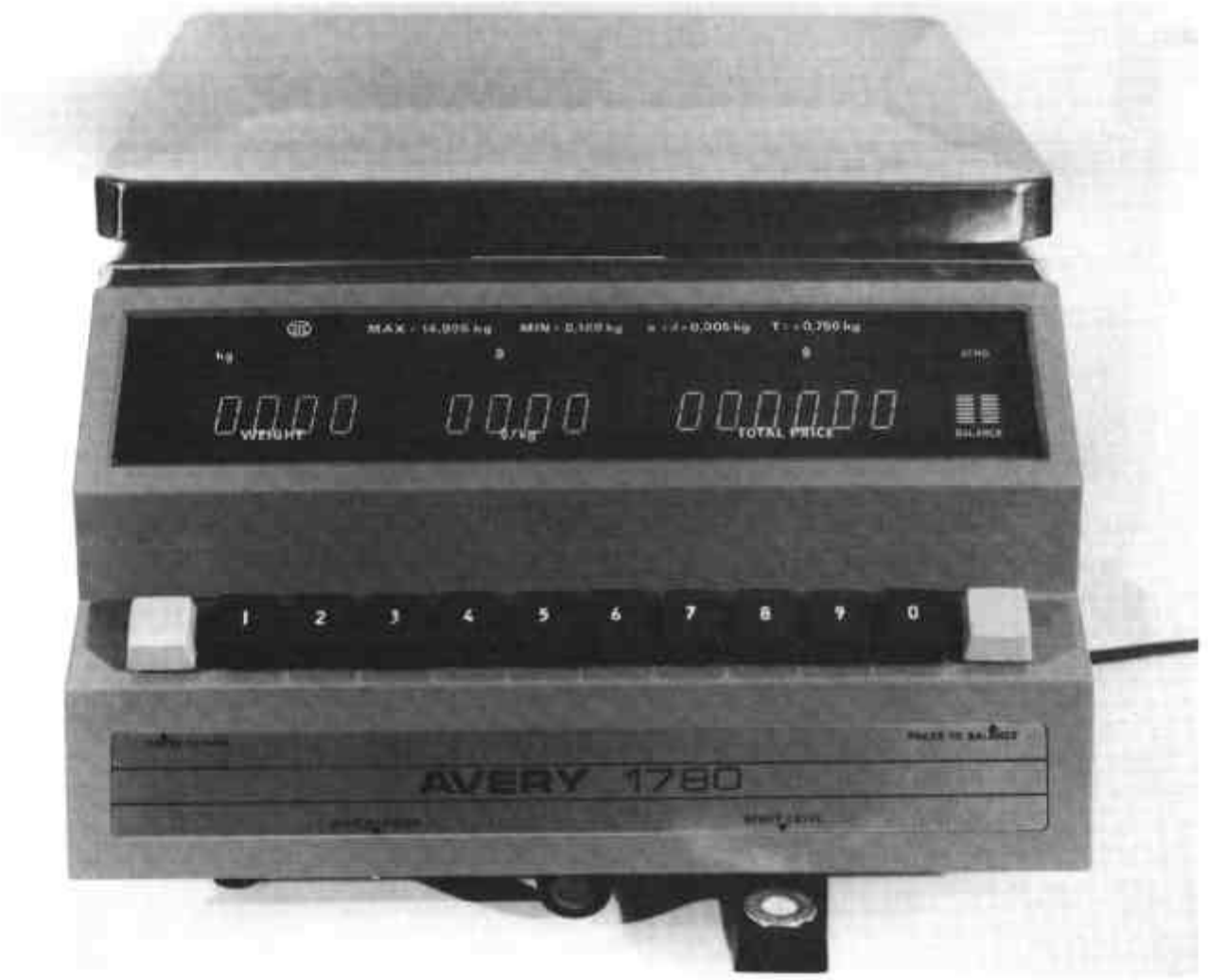
When the instrument is tilted so that the bubble in the level indicator moves 2 mm, the indication should not change by more than 2e, and when, in the tilted position, the 10e load is removed and zero is allowed to automatically reset, or it is manually reset, the instrument should satisfy the accuracy requirements given above.

8. Price-computing Accuracy

The indications of mass, unit price and price as listed in Table 1, will indicate that the price-computing and mass circuits are functioning correctly. The exact figures should be indicated as rounding is effected within the computer.

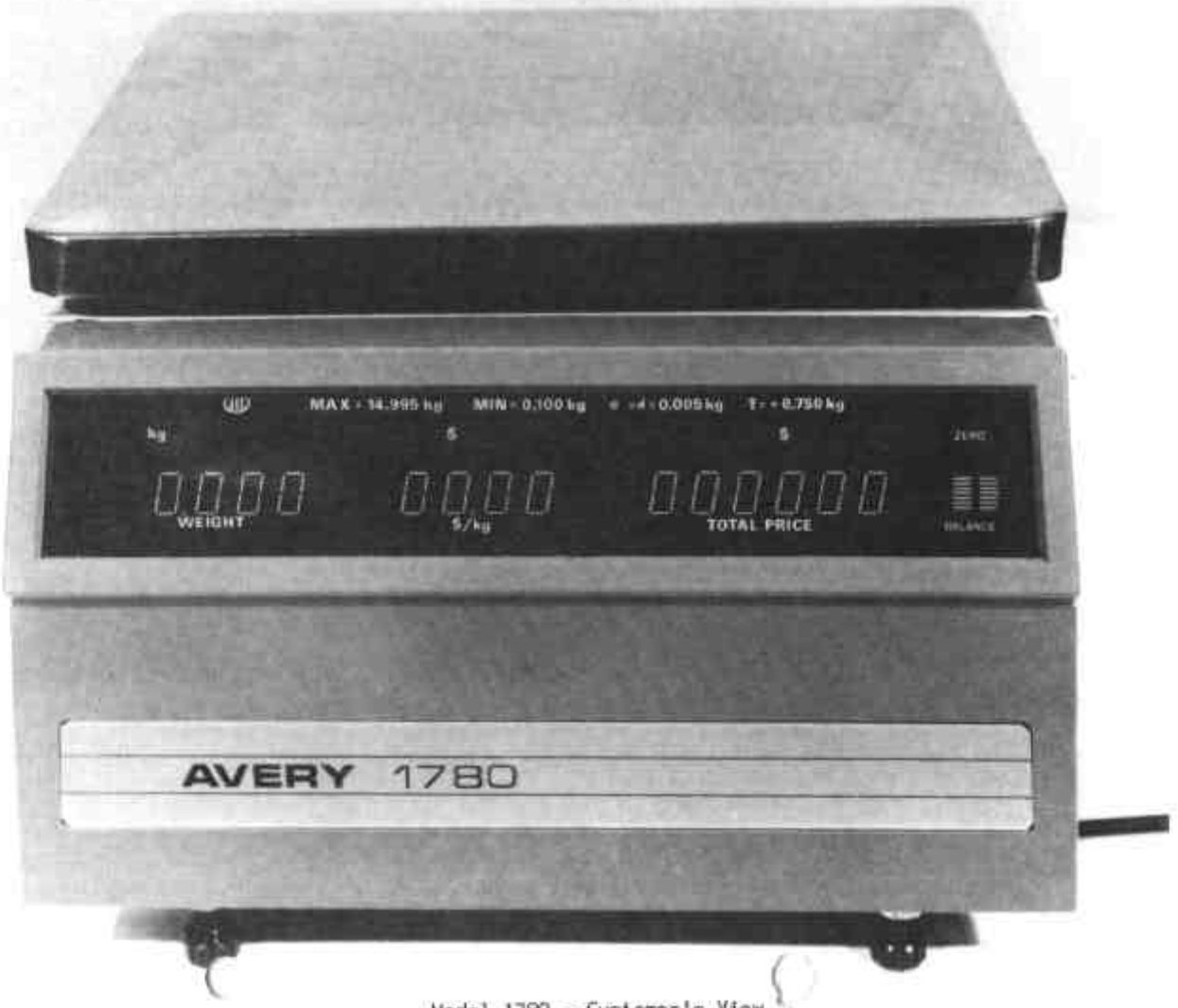
Note: This test does not establish correct mass indications; a separate test may be carried out in conjunction with the above test.

FIGURE 6/4D/211 - 1



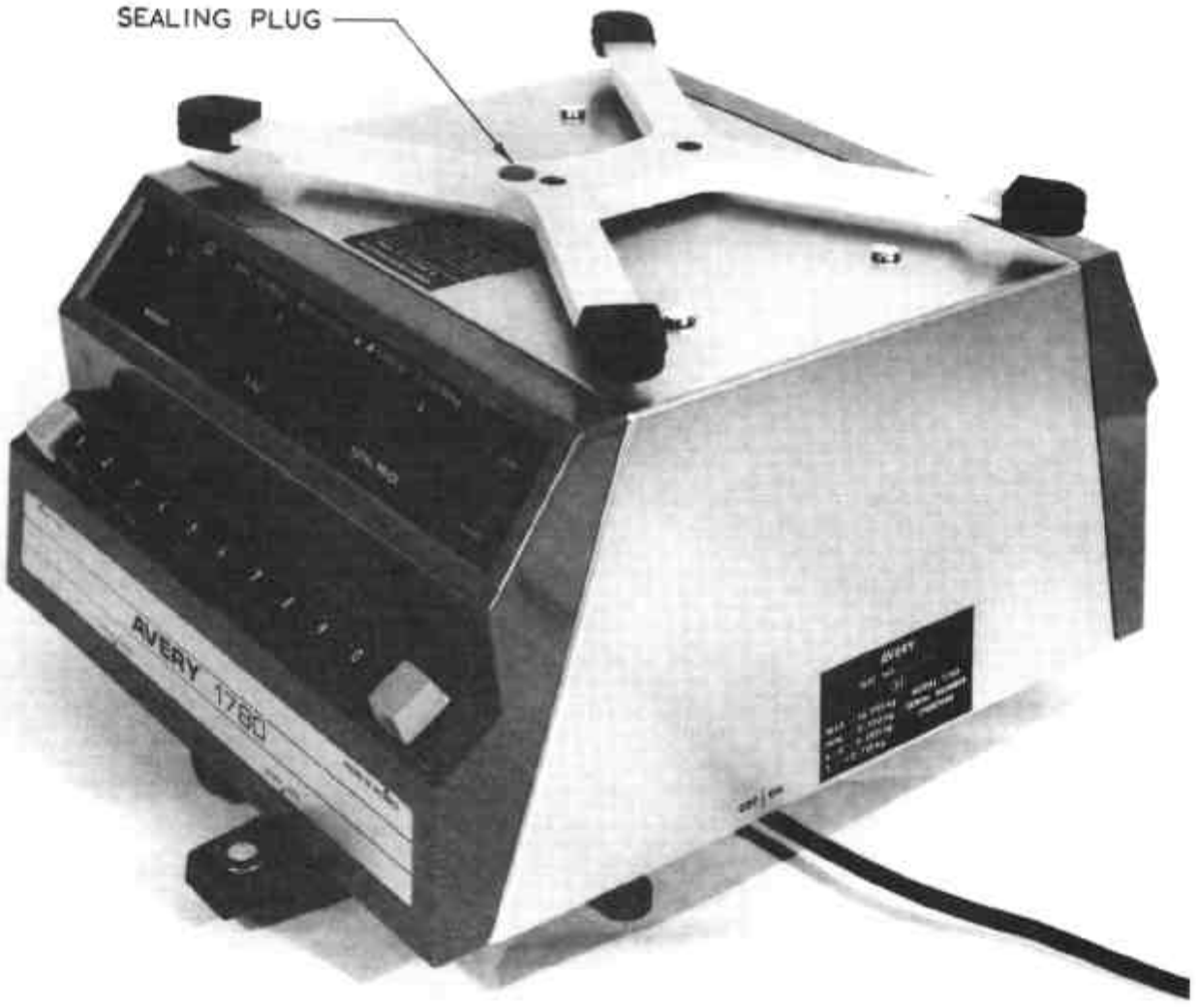
Avery Model 1780 - Vendor's View

FIGURE 6/40/211 - 2



Model 1780 - Customer's View

FIGURE 6/4D/211 - 3



Model 1780 Showing Sealing