



# NATIONAL STANDARDS COMMISSION

## NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

### REGULATION 9

#### CERTIFICATE OF APPROVAL No 6/4D/213

20/9/82

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

0/1

Avery Model 1790 Weighing Instrument

submitted by Avery Australia Ltd  
3-5 Birmingham Avenue  
Villawood NSW 2163.

#### Conditions of Approval

This approval is subject to review on or after 1/10/87.

Instruments purporting to comply with this approval shall be marked NSC No 6/4D/213.

This approval may be withdrawn if instruments are constructed and used other than as described in the drawings and specifications lodged with the Commission.

Signed

Executive Director

#### Descriptive Advice

Pattern: approved 20/9/82

- . A self-indicating price-computing weighing instrument of 15 kg capacity with a verification scale interval of 0.005 kg.

Variants: approved 20/9/82

1. With an output socket for the connection of auxiliary and/or peripheral equipment.
2. With the purchaser indicator in a separate housing.

Technical Schedule No 6/4D/213 describes the pattern and variants 1 and 2.

Variants: approved 5/1/83

3. With an integral label printer fitted beneath the load receptor.
4. The pattern or variants with price-look-up (PLU) facility.

Technical Schedule No 6/4D/213 Variation No 1 describes variants 3 and 4.

Variant: approved 10/6/83

5. With a capacity of 6 kg and with a verification scale interval of 0.002 kg.

Technical Schedule No 6/4D/213 Variation No 2 describes variant 5.

Variants: approved 2/7/86

6. With the price-computing facility inhibited when connected to a price-computing auxiliary device.

7. With an Avery model 8636 Packscan printer.

Technical Schedule No 6/4D/213 Variation No 3 describes variants 6 and 7.

Filing Advice

Certificate of Approval No 6/4D/213 dated 27/6/83 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Certificate of Approval No 6/4D/213 dated 11/8/86  
Technical Schedule No 6/4D/213 dated 25/10/82  
Technical Schedule No 6/4D/213 Variation No 1 dated 25/1/83  
Technical Schedule No 6/4D/213 Variation No 2 dated 27/6/83  
Technical Schedule No 6/4D/213 Variation No 3 dated 11/8/86  
Test Procedure No 6/4D/213 dated 25/10/82 (including Table 1)  
Figures 1 to 4 dated 25/10/82.



# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 6/4D/213

Pattern: Avery Model 1790 Weighing Instrument

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

### 1. Description of Pattern

The pattern is a self-indicating price-computing weighing instrument (Figures 1 and 2).

Maximum Capacity	15 kg
Scale Interval	0.005 kg
Unit Price	\$999.99/kg in 1c increments
Price	\$9999.99 in 1c increments

#### 1.1 Zero

Zero is automatically corrected to within 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 correct within 0.25e.

#### 1.3 Display Check

When power is applied to the instrument, there is a small time delay before the displays will show all 8's, and then blank. The instrument will then automatically rezero, if the instrument is within 30e of zero.

Pressing the DISPLAY CHECK button causes the displays to illuminate, then blank, and then return to their original state.

#### 1.4 Price

When a price is entered, if a delay of greater than 2 seconds occurs between the entering of digits, the last digit entered will clear the price already set and become the first digit of the new price.

Price can also be cancelled by pressing the PRICE CANCEL button.

The price automatically returns to zero after a positive weighing has taken place unless the PRICE HOLD button has been pressed. Price Hold is cancelled by pressing the PRICE HOLD button again.

#### 1.5 Tare

Operation of the TARE button allows semi-automatic taring of a mass on the load receptor to within 0.25e. The tare is subtractive and of 15 kg capacity. The value of the tare entered will be indicated in the tare mass indicator. When semi-automatic tare is used, the tare entered will automatically cancel after a weighing with the load receptor empty.

Operating the TARE HOLD button will cause the entered tare to remain active after removal of the mass. The Tare Hold facility may be cancelled by pressing the TARE HOLD button again at any time.

In addition, when the Tare Hold facility is active, an entered tare may be cancelled with the load receptor empty after a weighing by pressing the TARE HOLD button.

### 1.6 Marking

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

Manufacturer's name or mark	
Serial number	
NSC approval number	NSC No 6/4D/213
Accuracy class	III
Maximum capacity	Max = 15 kg*
Minimum capacity	Min = 0.100 kg*
Verification scale interval	e = d = 0.005 kg*
Maximum subtractive tare	T = -15 kg

### 1.7 Levelling

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

### 1.8 Sealing

- (a) A sealing plug or paper seal suitably marked by the inspector, on the spider under the load receptor, prevents access to the calibration adjustments (Figure 3).
- (b) A paper seal covers an access hole in the casing under the load receptor (Figure 3).
- (c) A stamping plug is provided on the side of the instrument.

## 2. Description of Variants

### 2.1 Variant 1

The instrument fitted with an output socket, for the connection of peripheral equipment.

### 2.2 Variant 2

With the customer indicator in a separate housing (Figure 4).

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\*These markings should be repeated in the vicinity of each reading face if not already there.

TEST PROCEDURE No 6/4D/213

All load applications to the instrument should be in accordance with the Commissions recommended testing procedure for the elimination of rounding error as set out in Document 104.

The maximum permissible errors are:

- $\pm 0.5e$  for loads between 0 and 500e inclusive;
- $\pm 1e$  for loads between 501 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 then 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). 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 press the ZERO button; the instrument should not rezero.
- (b) Reduce the load to, say, 1.5% of maximum capacity and again press the ZERO button; the instrument should indicate zero balance.

3. 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 of 10e 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.

4. Load Test

Test loads are to be applied to the 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 to zero load.

5. Price-computing Accuracy

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

Note: This test does not establish correct mass indication; a separate test in accordance with Document 104, is necessary. This may be carried out in conjunction with the previous test.

#### 6. Range of Indication

- (a) The maximum mass indicated should not exceed the marked maximum capacity (Max) by more than 10e; above this indicated mass the indication should be blank.
- (b) The minimum mass indicated should be zero; below this the indication should be blank.

#### 7. 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.

TABLE 1

<u>Indicated Mass</u>	<u>Unit Price</u>	<u>Price</u>
kg	\$/kg	\$
0.100	99.99	10.00
0.190	898.82	170.78
15.000	666.66	9999.90
11.000	99.99	1099.89
10.000	999.99	9999.90
11.965	835.77	9999.99

Price-computing Table - 15 kg Instrument With 0.005 kg Scale Intervals  
And With Unit Price To \$999.99/kg And Total Price To \$9999.99.



# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/213

VARIATION No 1

Pattern: Avery Model 1790 Weighing Instrument

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

## 1. Description of Variants

### 1.1 Variant 3

With an integral label printer fitted beneath the load receptor.

#### 1.1.1 Sealing

As for the pattern, as described in Technical Schedule No 6/4D/213 dated 25/10/82, paragraph 1.8, (b) and (c) only.

Unlike the pattern the spider is not sealed. There is a seal on one of the printer mounting screws.

### 1.2 Variant 4

The pattern or variants with price-look-up (PLU) facility.



# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/213

VARIATION No 2

Pattern: Avery Model 1790 Weighing Instrument

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

1. Description of Variant 5

The model 1790 of 6 kg capacity by 0.002 kg scale intervals with unit price to \$999.99/kg and price to \$5999.94.

1.1 Marking

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

Manufacturer's name or mark  
Model number  
Serial number  
NSC approval number  
Accuracy class  
Maximum capacity  
Minimum capacity  
Verification scale interval  
Maximum subtractive tare

NSC No 6/4D/213

III

Max = 6 kg\*

Min = 0.040 kg\*

e = d = 0.002 kg\*

T = - 6 kg

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\*These markings should be repeated in the vicinity of each reading face if not already there.

27/6/83





# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/213

VARIATION No 3

Pattern: Avery Model 1790 Weighing Instrument

Submittor: Avery Australia Ltd  
3-5 Birmingham Avenue  
Villawood NSW 2163

1. Description of Variants

1.1 Variant 6

With the price-computing facility inhibited i.e. displaying mass only, when connected to an auxiliary device which has price-computing capability.

1.2 Variant 7

With an Avery model 8636 Packscan printer which has facilities for storing product information, unit price and tare-look-up tables.

When in use the printer inhibits the price-computing facility of the weighing instrument and can communicate tare information to the weighing instrument, with the mass and tare mass displays modified accordingly.

As the taring device of the printer operates digitally (resetting zero to within  $\pm 0.5e$ ) the printer is not for retail counter use and must be so marked.

TEST PROCEDURE

Taring

Digital taring devices shall reset the mass indicator to zero within  $\pm 0.5e$ .



# NATIONAL STANDARDS COMMISSION

## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/213

CHANGE No 1

The following change is made to the description of the Avery Model 1790 Weighing Instrument.

From Test Procedure No 6/4D/213 dated 25/10/83, delete Test 2(b).

Note: Figure 1 shows an instrument with the notice "See that weight indication ..... machine".

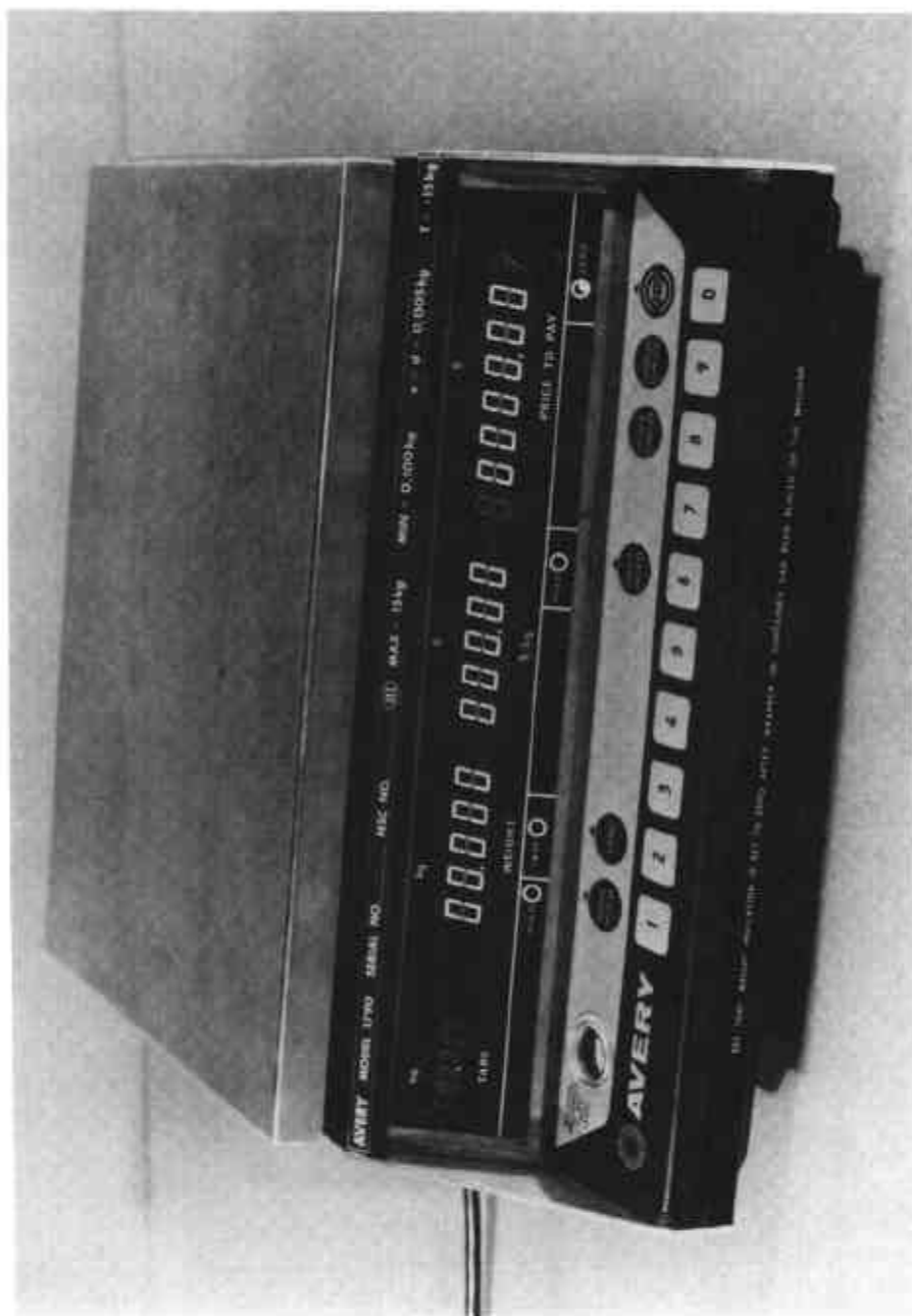
This notice is not mandatory.

Signed

Executive Director

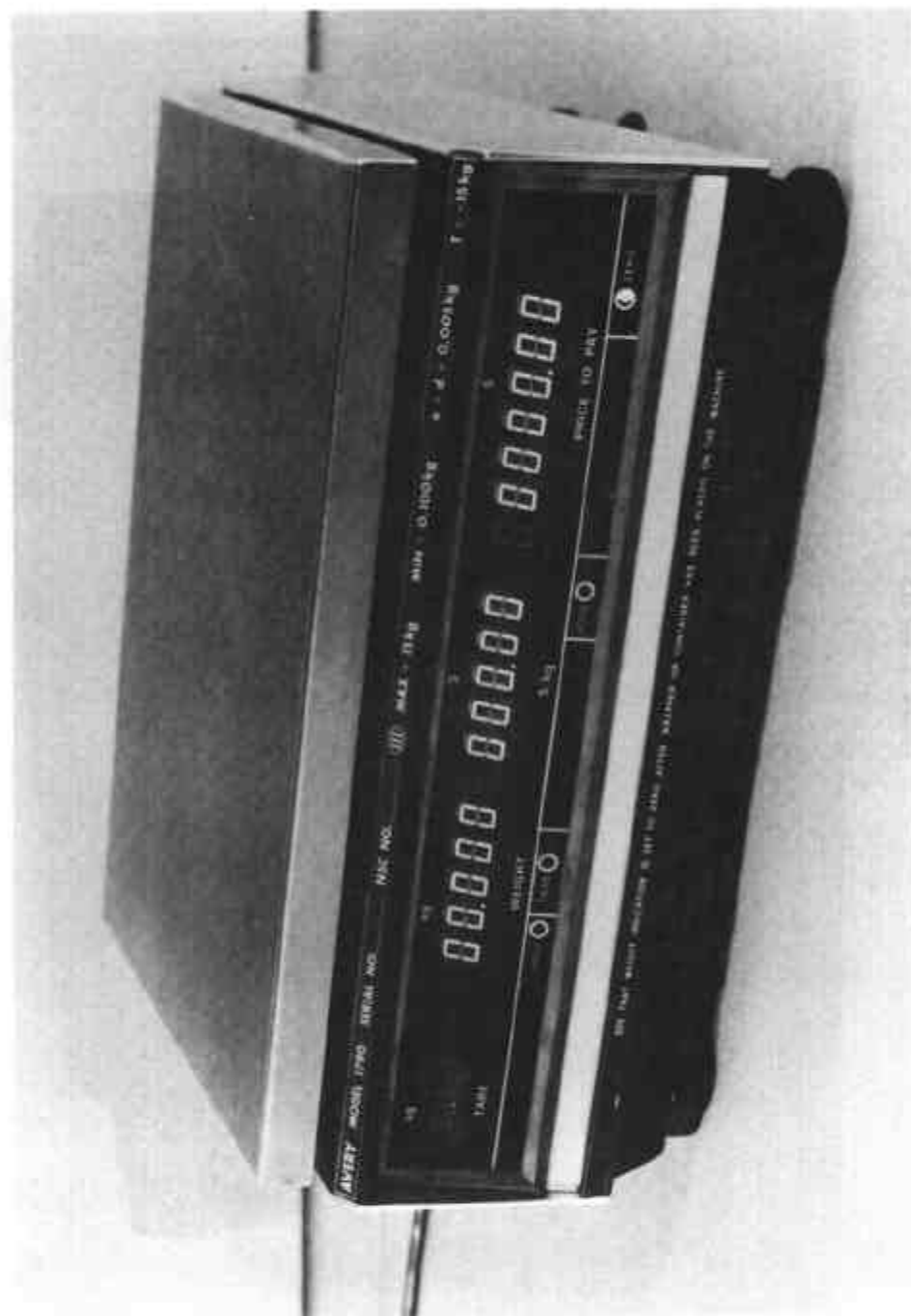
30/9/83

FIGURE 6/40/213 - 1



Model 1790 - Vendors' Side

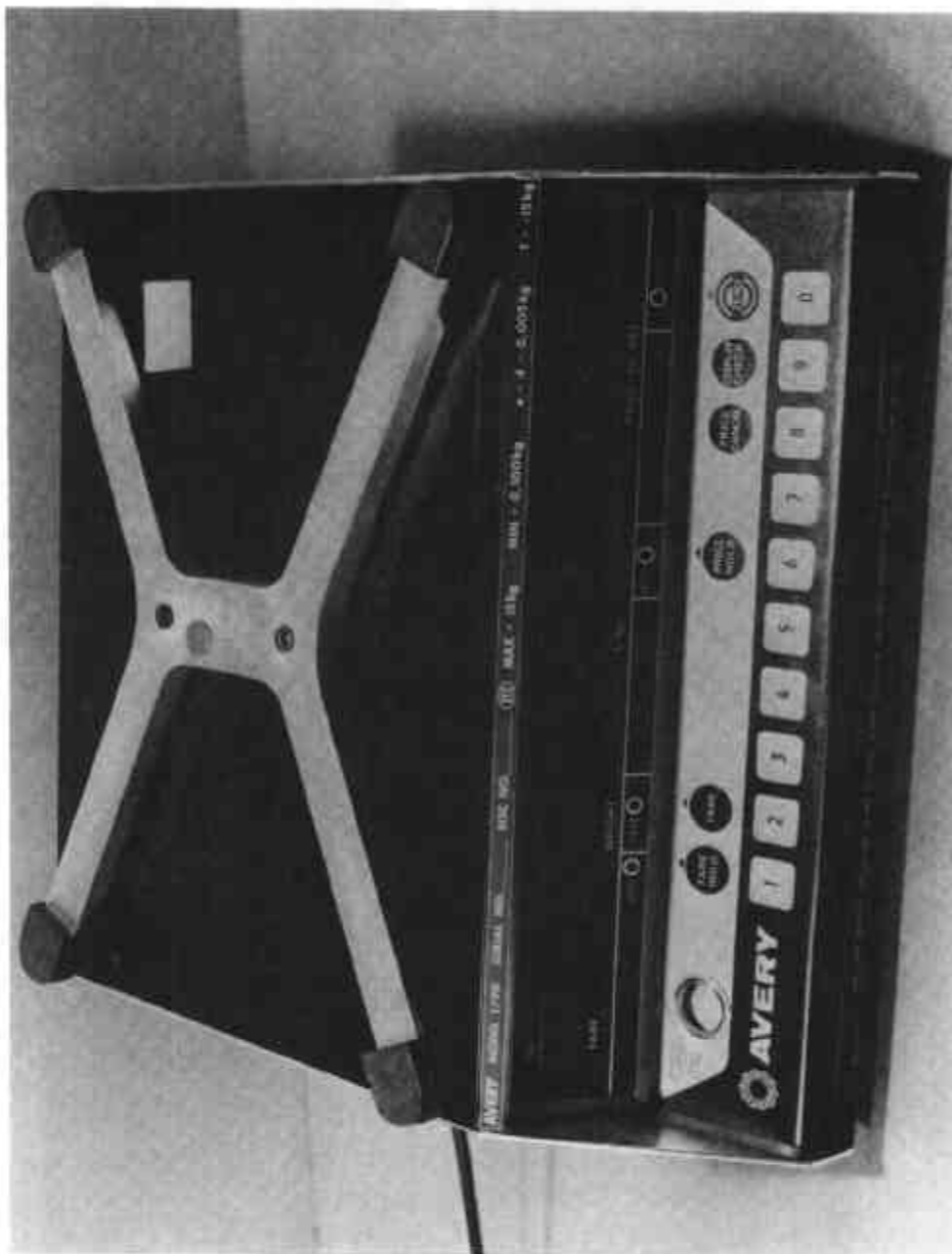
FIGURE 6/4D/213 - 2



Model 1790 - Purchasers' Side

25/10/82

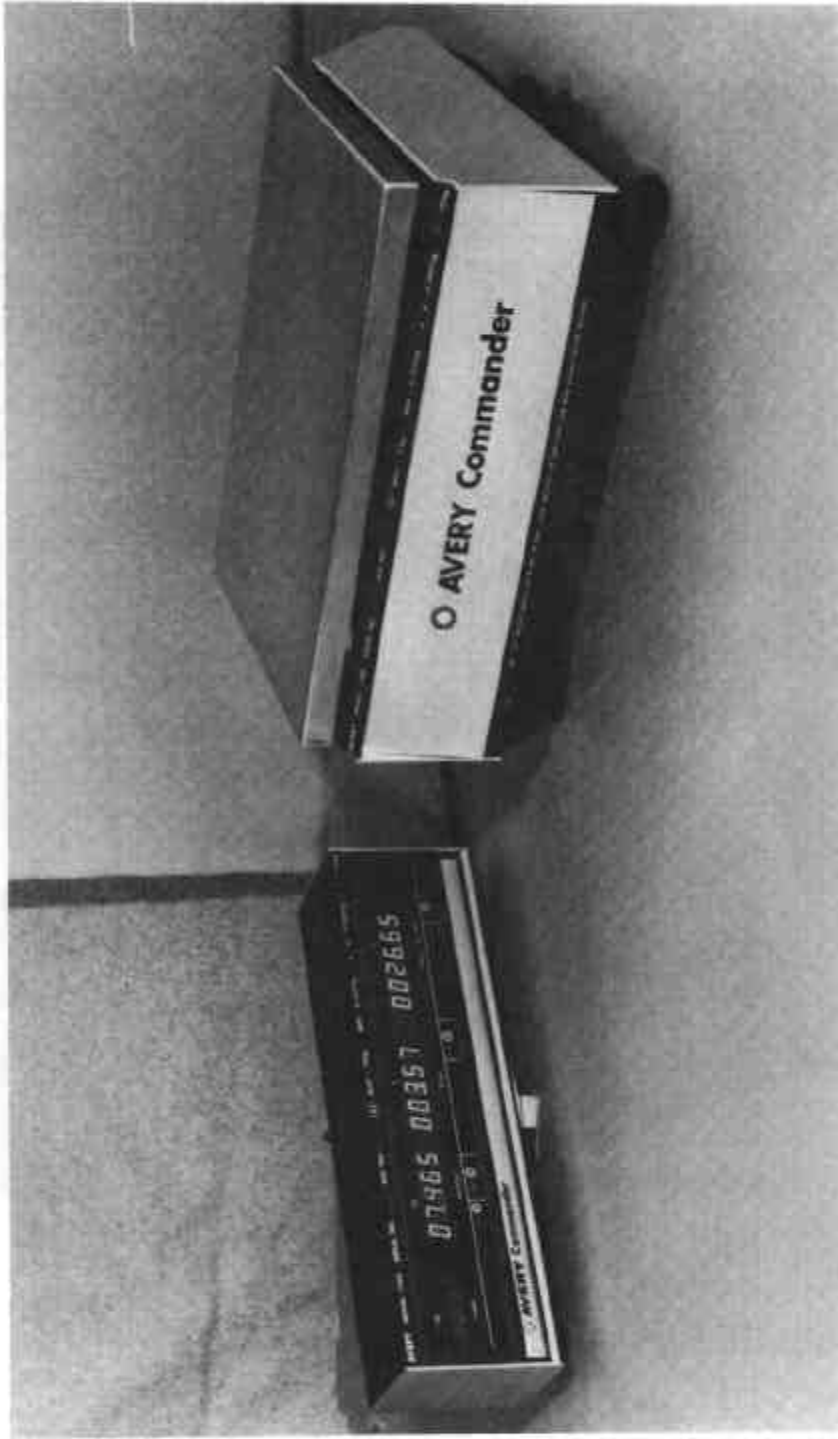
FIGURE 6/40/213 - 3



Sealing Of Model 1790

25/10/82

FIGURE 6/40/213 - 4



Model 1790 With Separate Customer Indicator

25/10/82