CANCELLED

6/4D/203
24/8/87

NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/4D/203

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

TEC Model SL 55-15 Weighing Instrument

submitted by TEC Retail Systems and Office Products
(originally submitted by Tokyo Electric Co Ltd)
Unit B, 6-8 Byfield Street
North Ryde NSW 2113.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/1/86.
This approval expires in respect of new instruments on 1/1/88.

Instruments purporting to comply with this approval shall be marked NSC No 6/4D/203.

This approval may be withdrawn if instruments are constructed other than in accordance with the drawings and specifications lodged with the Commission.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

L. Birch

Executive Director

Descriptive Advice

Pattern: approved 16/2/81

- TEC model SL 55-15 price-computing weighing instrument of 15 kg capacity with a verification scale interval of 0.005 kg.

Variants: approved 16/2/81

1. Of 6 kg capacity with a verification scale interval of 0.002 kg, and known as a model SL 55-06.

2. With reduced managerial functions.

3. With reduced managerial functions and without connection to an approved printer.

4. With the indicator in various remote housings.

5. With the keyboard in various remote housings, either together with or separate from the indicator.

...../2

6. With the HP8 or HP12 printer replaced by another Commission-approved printer.

Technical Schedule No 6/4D/203 describes the pattern and variants 1 to 6.

Variant: approved 17/1/85

7. With the price-look-up (PLU) facility of the pattern extended to 999 items and accessible using the numeric keyboard.

Technical Schedule No 6/4D/203 Variation No 1 describes variant 7.

Variant: approved 19/5/87

8. With a program loader facility for changing the unit prices assigned to the price-look-up (PLU) entries.

Technical Schedule No 6/4D/203 Variation No 2 describes variant 8.

Filing Advice

Certificate of Approval No 6/4D/203 dated 24/4/85 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Certificate of Approval No 6/4D/203 dated 24/8/87
Technical Schedule No 6/4D/203 dated 6/3/81 (including Tables 1 and 2)
Technical Schedule No 6/4D/203 Variation No 1 dated 24/4/85
Technical Schedule No 6/4D/203 Variation No 2 dated 24/8/87
Test Procedure No 6/4D/203 dated 6/3/81
Figures 1 to 8 dated 6/3/81

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/203

Pattern: TEC Weighing Instrument Model SL55-15

Submittor: Tokyo Electric Company Ltd,
14-10, 1 Chome, Uchikanda,
Chiyodaku,
Tokyo, Japan.

1. Description of Pattern

1.1

The pattern is a self-indicating price-computing weighing instrument (Figures 1, 2 and 3), with a TEC Model HP12 or HP8 printer connected to it.

Range:

Capacity	15.025 kg
Scale interval	0.005 kg
Unit price	$99.99/kg in 1c increments
Price	$999.99 in 1c increments
Tare	-0.995 kg

1.2 Zero

The instrument is automatically corrected to zero within $\pm$ 0.25e when the push-button marked Z or ZERO is pressed.

1.3 Automatic Zero Correction Device

This device re-zeroes the instrument within $\pm$ 0.25e whenever the mass indicator indicates zero.

1.4 Check Function

When power is applied to the instrument all indicators will display the numbers 0 to 9 sequentially and all function indicators will light; all displays will then blank until the zero push-button is pressed.

1.5 'S' Button

Allows the unit price to be retained or automatically cancelled.

1.6 Tare

When a mass of up to 0.995 kg is on the load receptor, pressing the button marked T will cause the display of mass to return to 0, the TARE kg indicator to display the value of the mass tared, and the TARE light to illuminate.

1.7 Clear

Pressing the button marked C will clear the unit price and price displays.

1.8 Price Look-up Function

Pressing any of the buttons marked 1 to 24 (inclusive) will cause the unit price preset into the memory accessed by that button to be displayed in the unit price display area.

1.9 Managerial Functions

The instrument is capable of performing a number of managerial functions which are described below but are not subject to pattern approval and do not affect the performance of the instrument.

(a) Non-weigh

This button is used to enter transactions for articles which are not weighed. The ticket produced displays price only with blanks or non-numerical characters in the mass and unit price spaces.

(b) Sub-total

This button totals the transactions up to that time for the customer involved.

(c) Void

This button cancels the last transaction from memory.

(d) Price-hold

Pressing this button holds the final totals for the last transaction on the display.

(e) Amount Tendered and Total

(i) Pressing the button marked AT/TL causes the customer total accumulated in memory to be displayed, and simultaneously clears the memory. The TOTAL light will illuminate.

(ii) Entering the amount tendered via the keyboard and then pressing this button will cause the correct change to be displayed. The AMOUNT TENDERED and CHANGE lights will illuminate.

(f) Read

This button allows the operator to display the progressive totals of each of the departments (up to 6) controlled by the instrument. During the READ operation weighing is inhibited and the NO SALE light illuminates.

(g) Departments

After a transaction, pressing one of the keys marked I to VI causes that transaction to be stored in the appropriate memory and the transaction to be printed.

(h) Keyswitch

This key should be in the REG position for normal use. In either OFF or SET the weighing is inhibited and the NO SALE light will be illuminated.

1.10 Markings

All instruments are marked with the following data:

Manufacturer's name	
Serial number	
NSC Approval number	NSC No 6/4D/203
Accuracy class	(III)
Maximum capacity in the form:	Max .....*
Minimum capacity in the form:	Min .....*
Verification scale interval in the form:	d_d = e = ...*
Maximum subtractive tare in the form:	T = - .....
NSC Approval number of printer	

1.11 Sealing

The calibration adjustments are sealed with a lead plug seal (Figure 4). The output socket (Figure 5) and the instrument cover (Figure 6) are sealed with lead and wire seals.

1.12 Levelling

The instrument is fitted with a level indicator and adjustable feet. A level notice is located near the level indicator.

2. Description of Variants

2.1 Variant 1

Of capacity 6 kg, known as Model SL55-06.

Range:

Capacity	6.000 kg
Scale interval	0.002 kg
Unit price	$99.99/kg in 1c increments
Price	$599.94 in 1c increments
Tare	-0.998 kg

2.2 Variant 2

With reduced managerial functions. There are two levels of reduction:

(i) with department keys and READ key only (Figures 7 and 8), and

(ii) with the READ key only, which is then marked PRINT.

In (i) functions are as described for the pattern.

In (ii) the PRINT key controls the printer and must be used to print the transaction.

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

2.3 Variant 3

With reduced managerial functions and without connection to an approved printer. In this case the instrument cannot provide totals in the presence of the customer.

2.3.1 The output socket is sealed with a lead and wire seal (Figure 6).

2.4 Variant 4

With the indicator in various remote housings.*

2.5 Variant 5

With the keyboard in various remote housings, either separate from or together with the indicator.*

2.6 Variant 6

With the TEC HP8 or HP12 printer replaced by another Commission approved printer.

* Where the keyboard and/or indicator are remote from the load receptor, the components shall be so positioned that it is obvious that they are related. The indicator shall be not less than 400 mm nor more than 1 metre above the counter and not more than 1 m distant measured horizontally from the load receptor.

TEST PROCEDURE No 6/4D/203

1. Accuracy Requirements

The maximum permissible errors are:

± 0.5e for loads between 0 and 500e inclusive;
± 1.0e for loads between 501e and 2000e inclusive; and
± 1.5e for load above 2000e.

2. Zero Test

As the automatic device resets zero when the weighing mechanism is in equilibrium within 0.5 scale interval of zero, zero should be checked, as described in the Commission's Test Procedure for the Elimination of Rounding Error for Weighing Instruments with Digital Indication (Document 104), with a load equal to, say, 10 scale intervals 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.

3. 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 press the zero push button; the instrument should not re-zero.

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

4. Level Sensitivity

As the automatic zero device may prevent the zero fron 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.

5. Price-computing Accuracy

The indications of mass, unit price and price, as listed in Tables 1 and 2, 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 in accordance with the Commission's recommended testing procedure for the elimination of rounding errors, as in Document 104, is necessary. This may be carried out in conjunction with the above test.

6. 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 indicator should be blank.

7. Tare Range

(a) Place a mass equal to 0.995 kg for the SL55-15 or 0.998 kg for the SL55-06 on the receptor and tare it off. Check that the TARE light illuminates and the value 0.995 kg or 0.998 kg, as appropriate, appears in the tare display.

(b) Place a mass of 1.010 kg on the receptor and attempt to tare it off. This should not be possible.

8. Load Tests

Test loads are to be applied to the instrument with the first step equal to the minimum capacity, increasing to maximum capacity in not less than 5 equal steps, and followed by decreasing loads of not less than 5 equal steps.

Note: 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 instrument should display these loads within the applicable tolerance as listed above.

TABLE 1

Indicated mass kg	Unit price $/kg	Price $
0.000	0.00	0.00
0.100	99.99	10.00
0.105	98.98	10.39
0.110	97.97	10.78
0.120	96.95	11.63
0.130	95.95	12.47
0.140	94.94	13.29
0.150	83.84	12.58
0.160	72.73	11.64
0.170	61.61	10.47
0.180	50.51	9.09
0.190	49.49	9.40
0.200	39.39	7.88
0.300	29.29	8.79
0.400	19.29	7.72
0.500	9.00	4.50
0.600	55.16	33.10
0.700	39.02	27.31
0.800	58.99	47.19
0.900	70.99	63.89
1.000	75.99	75.99
2.000	80.99	161.98
3.000	85.39	256.17
4.000	96.99	387.96
5.000	97.99	489.95
6.000	98.99	593.94
7.000	99.99	699.93
8.000	99.99	799.92
9.000	99.99	899.91
10.000	99.99	999.90
11.000	50.00	550.00
12.000	50.00	600.00
13.000	50.00	650.00
14.000	50.00	700.00
15.000	50.00	750.00

Test Procedure - 15 kg Instrument with Unit Price to $99.99/kg and Total Price to $999.99

TABLE 2

Indicated Mass kg	Unit Price 1/kg	Price $
0.000	00.00	0.00
0.040	99.99	4.00
0.052	99.81	5.19
0.064	99.76	6.38
0.076	99.67	7.57
0.088	99.59	8.76
0.090	99.49	8.95
0.110	99.39	10.93
0.220	91.29	20.08
0.330	92.19	30.42
0.400	93.99	37.60
0.500	94.80	47.40
0.600	95.92	57.55
0.700	96.93	67.85
0.800	97.94	78.35
0.900	98.90	89.01
1.000	11.24	11.24
1.500	29.00	43.50
2.000	39.98	79.96
2.500	49.00	122.50
3.000	59.99	179.97
3.500	69.90	244.65
4.000	79.95	319.80
4.500	89.90	404.55
5.000	99.95	499.75
6.000	99.99	599.94

Test Procedure - 6 kg Instrument with Unit Price to $99.99/kg and Price to $599.94

6/4D/203
24/4/85

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/203

VARIATION No 1

Pattern: TEC Model SL55-15 Weighing Instrument

Submittor: for variant 7
TEC & Tomas (Australia) Pty Ltd
30 Whiting Street
Artarmon NSW 2064

1. Description of Variant 7

With the price-look-up (PLU) facility of the pattern extended from 24 to 999 items and accessible using the numeric keyboard.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/203

VARIATION No 2

Pattern: TEC Model SL 55-15 Weighing Instrument

Submittor: TEC Retail Systems and Office Products
Unit B, 6-8 Byfield Street
North Ryde NSW 2113

1. Description of Variant 8

With a program loader facility for changing the unit prices assigned to the price-look-up (PLU) entries.

For this purpose, a number of these instruments may be connected so that their PLU's may be programmed concurrently.

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NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/203

CHANGE No 1

The following change is made to the description of the TEC Weighing Instrument Model SL55-15

given in Technical Schedule No 6/4D/203 dated 6/3/81

The following NOTE should be added to paragraph 1.1 on page 1:

NOTE: Both printers have the following capacities (which are lower than for the scale):

Unit Price	$9.99/kg in 1c increments
Price	$99.99 in 1c increments

Signed

Raymond Lach

Acting Executive Director

23/3/82

FIGURE 6/4D/203 - 1

TEC Model SL55-15 with full management facilities - Vendor's side

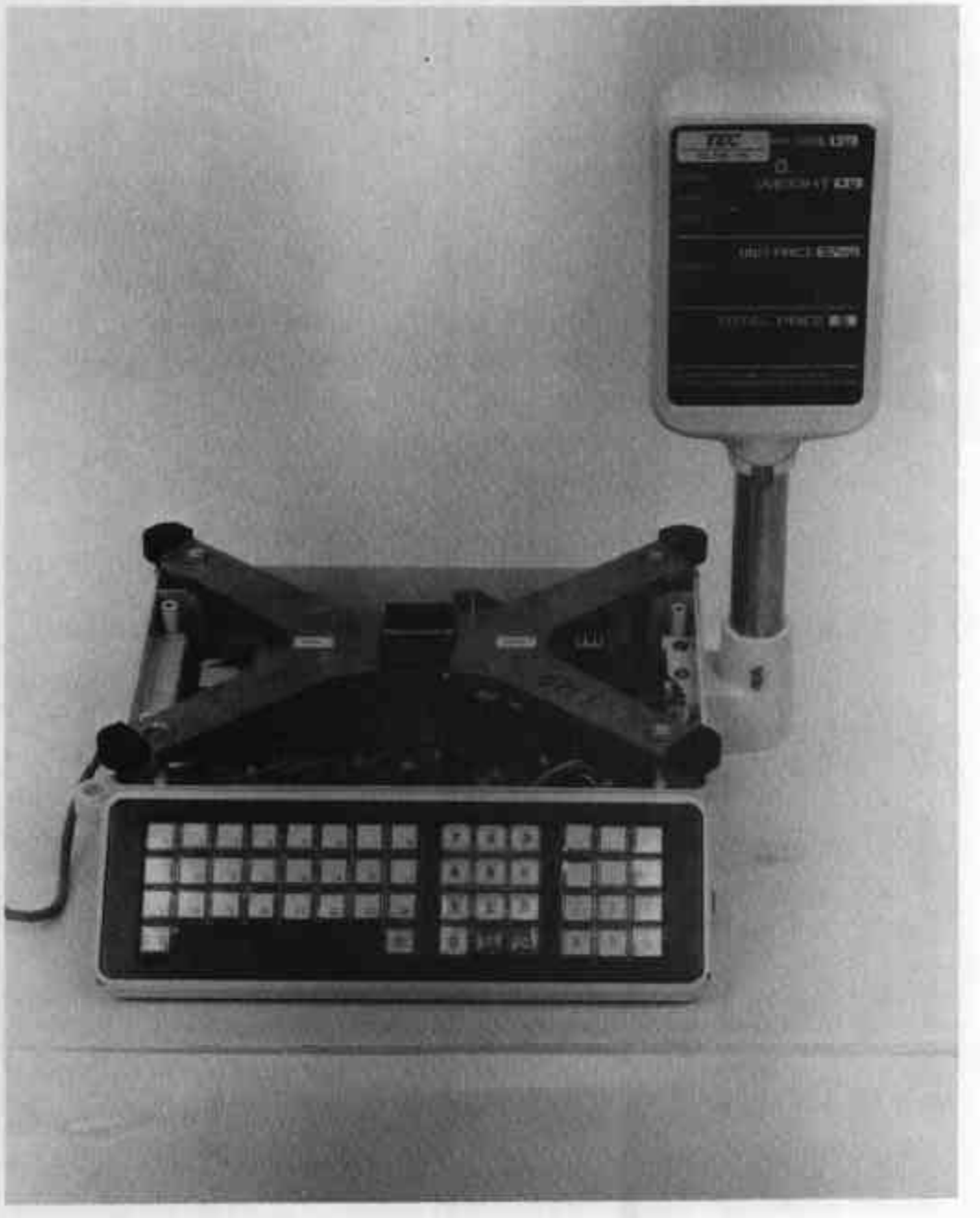
6/3/81

FIGURE 6/40/203 - 2

TEC Model SL55-15 with full management facilities - Purchaser's Indicator

6/3/81

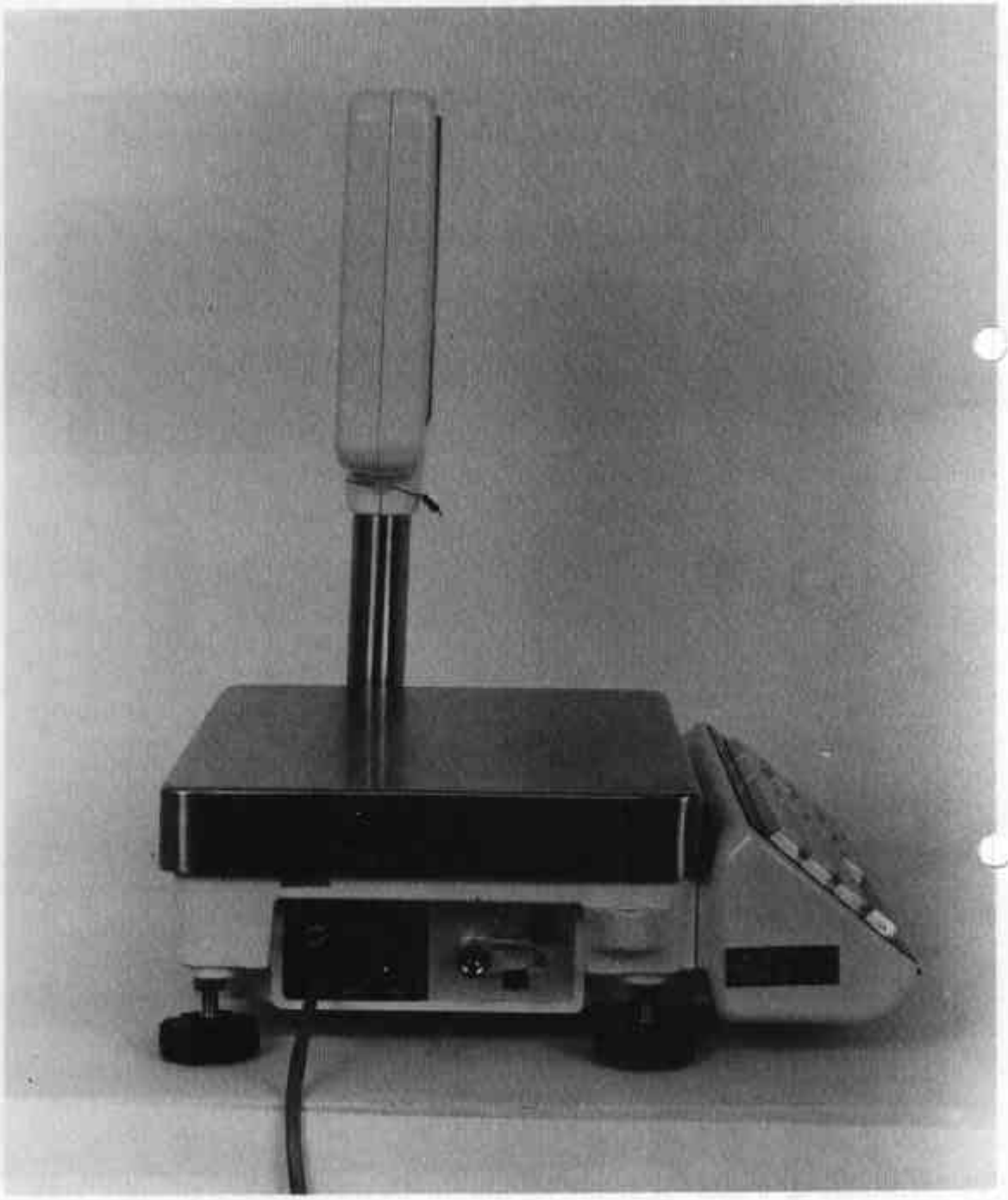
FIGURE 6/40/203 - 3



With Cover removed, showing Spider and Load Cell

6/3/81

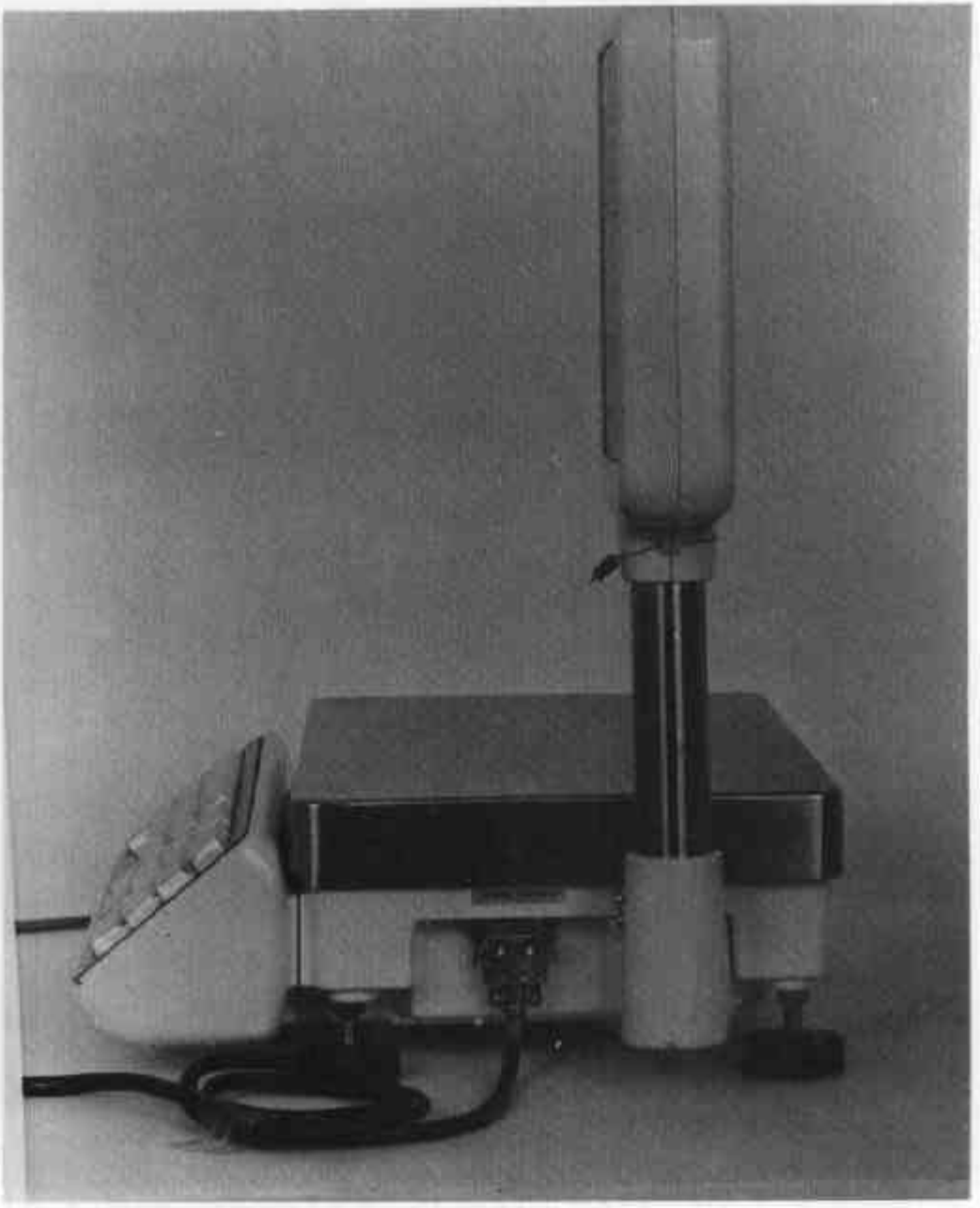
FIGURE 6/4D/203 - 4



Sealing of Control Panel

6/3/81

FIGURE 6/4D/203 - 5



Sealing of Output Socket and Cover

6/3/81

FIGURE 6/4D/203 - 6

With Load Receptor removed to show sealing of Cover

(N.B. Sealing of socket as shown is the sealing requirement for Variant 3)

FIGURE 6/40/203 - 7

Model SL55-15 with reduced management facilities - Vendor's side

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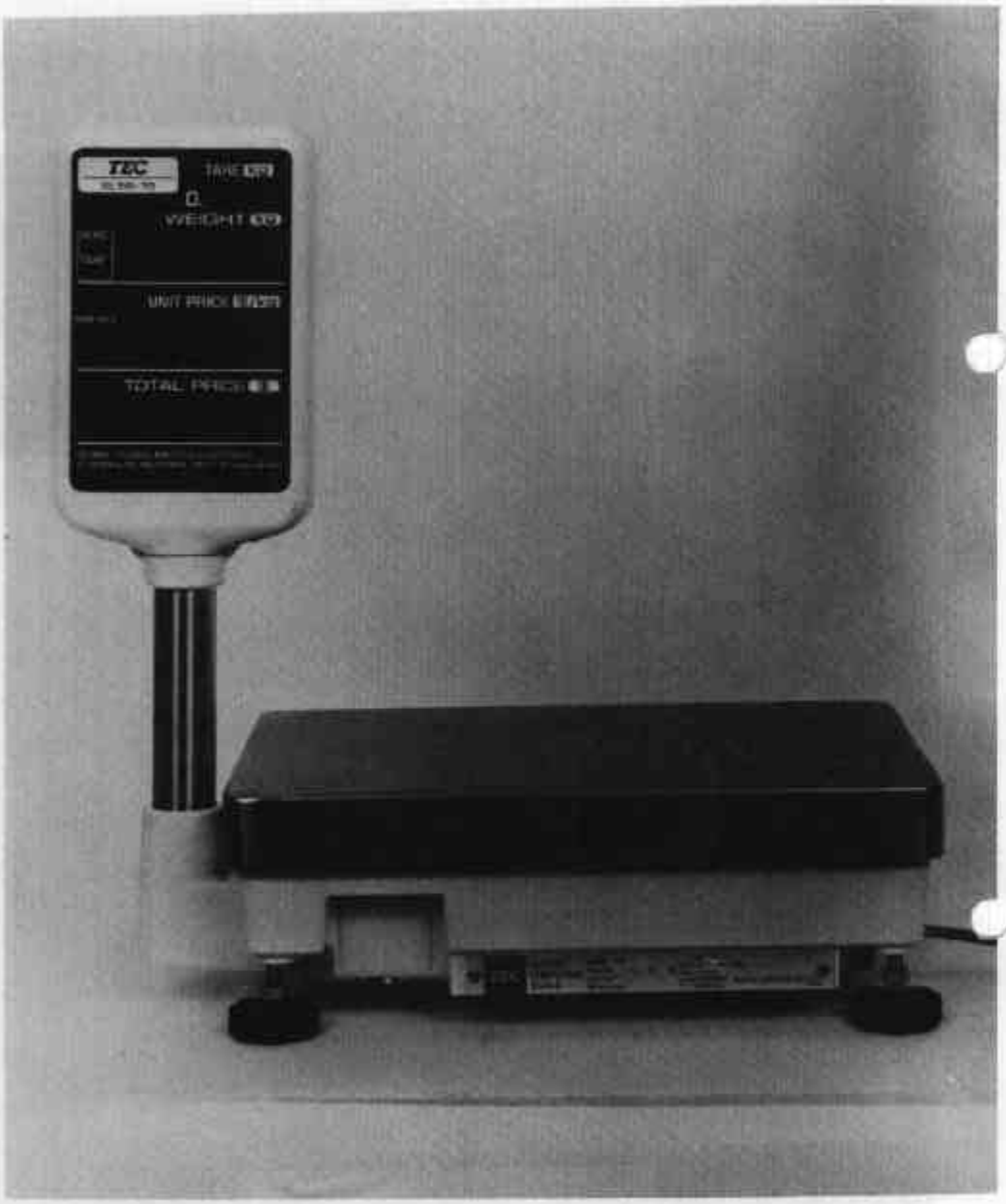
FIGURE 6/4D/203 - 8



Model SL55-15 with reduced management facilities - Purchaser's side

6/3/81