CANCELLED

NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS - REGULATION 9

CERTIFICATE OF APPROVAL No 6/4D/80

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

TEC Model SL-32-15 Weighing Instrument

submitted by Tokyo Electric Company Ltd,
14-10, 1-Chome, Uchikanda,
Chiyodaku,
Tokyo, Japan,

Variant 11 submitted by:

Colbro Stuart Walker,
56-60 Parramatta Road,
Lidcombe, New South Wales, 2141,

are suitable for use for trade.

The approval of the pattern and variants is subject to review on or after 1/6/83.

All instruments purporting to comply with this approval shall be marked NSC No 6/4D/80.

Relevant drawings and specifications are lodged with the Commission.

Signed

Executive Director

Descriptive Advice

Pattern: approved 8/6/78

. Of capacity 15.0 kg by 0.005 kg scale intervals, with price-computing in 1c increments to $99.99/kg and price to $999.99.

Variant: approved 29/9/78

1. With purchaser's indicator in a separate housing.

Variant: approved 26/1/79

2. Of capacity 6.0 kg by 0.002 kg scale intervals, with price-computing in 1c increments to $99.99/kg and price to $599.94, known as SL-32-06.

Variants: approved 5/2/79 and 22/3/79

3. With the keyboard and the tool-operated zero push button on a separate module.

4. With a push button zero device replacing the tool operated zero push button.

8/3/82

...../2

5. Model SL-32-15 or model SL-32-06 with a TEC HP-11 label printer for retail counter use.

Variants: approved 28/8/79

6. Model SL-32-15 or model SL-32-06 with TEC HP-8 label printer for retail counter use.

7. Model SL-32-15 or model SL-32-06 with tare facility, not for retail counter use.

8. Model SL-32-15 or model SL-32-06 with tare facility and TEC HP-11 label printer, or TEC HP-8 label printer, for prepacking use only.

Variants: approved 21/10/80

9. TEC HP-11 label printer with switch to allow cancellation of unit price and total price functions.

10. Model SL-32-15 or model SL-32-06 with TEC HP-12 label printer for prepackaging or retail counter use, or, when fitted with tare, for prepackaging use only.

Technical Schedule No 6/4D/80 dated 3/11/80 describes the pattern and variants 1 to 10.

Variant: approved 8/2/82

11. TEC model HP-8 label printer with modified housing.

Technical Schedule No 6/4D/80 Variation No 1 dated 8/3/82 describes variant 11.

Filing Advice

Certificate of Approval No 6/4D/80 dated 3/11/80 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Certificate of Approval No 6/4D/80 dated 8/3/82
Technical Schedule No 6/4D/80 dated 3/11/80
Technical Schedule No 6/4D/80, Variation No 1 dated 8/3/82.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/80

Pattern: TEC Weighing Instrument Model SL-32-15

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

1. Description of Pattern

The pattern is a self-indicating price-computing weighing instrument (Figures 1, 2 and 3).

Range:

Capacity	15,0 kg
Scale interval	0,005 kg
Unit price	$99,99/kg in 1 c increments
Price	$999,99 in 1 c increments

1.1 Zero

The instrument is automatically corrected to zero within ±0,25 e when the tool-operated push button marked ZERO is pressed.

1.2 Automatic zero correction device

This device re-zeroes the instrument within ±0,25 e whenever the mass indicator indicates zero.

1.3 Check Button

When power is applied to the instrument all indicators will display the numbers 0 to 9 sequentially then blank until the zero push button is pressed.

1.4 'S' Button

Allows the unit price to be retained or automatically cancelled.

1.5 Markings

All instruments are marked with the following data:

Manufacturer's name	
Serial number	
NSC Approval Number	NSC No 6/4D/80
Accuracy class	(III) *
Maximum capacity in the form:	Max .....*
Minimum capacity in the form:	Min .....*
Verification scale interval in the form:	d_d=e=.....*

1.6 Sealing

The calibration adjustments are sealed with a lead plug seal (Figures 1 and 2). The output socket and the instrument cover are sealed with a lead and wire seal (Figures 4 and 5).

1.7 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

1. With purchaser's indicator in a separate housing (Figure 6) and with interconnecting cable internally connected. A notice advising that the indicator should be located so that it is clearly associated with the appropriate weighing unit is provided.

1.1 Sealing

The purchaser's indicator is sealed with a lead and wire seal (Figure 6).

2. Of capacity 6 kg, known as Model SL-32-06.

Range:

Capacity	6,0 kg
Scale interval	0,002 kg
Unit price	$99,99/kg in 1 c increments
Price	$599,94 in 1 c increments

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

3. With keyboard and tool-operated zero push button on a separate module located up to one metre from the weighing instrument (Figure 10).

   The interconnecting cable is internally connected.

4. With a push button zero device replacing the tool-operated zero push button.

5. HP 11 Ticket Printer (Figure 7) with the TEC weighing instrument model SL-32-15 or SL-32-06.

   Range:

	Model SL-32-15	Model SL-32-06
Capacity	15,0 kg	6,0 kg
Scale interval	0,005 kg	0,002 kg
Unit price	$9,99/kg	$9,99/kg
Price	$99,99	$99,99

   Tickets (Figure 12), intended for printing in the presence of the purchaser, may be hand-held or adhesive.

   When price only is printed, the symbol "$" or the word "dollars" may be printed above or below the price, or the symbol "$" may be printed before the price, either preprinted on the ticket or printed by the printer.

   5.1 Sealing

   (1) The printer is sealed with a stamping plug (Figures 7 and 9).

   (2) The data cable is sealed to the printer and to the weighing instrument with a lead and wire seal (Figures 5, 7 and 9) or, alternatively, the serial number of the printer is sealed to the weighing instrument.

6. HP 8 Ticket Printer (Figure 11) with the TEC weighing instrument model SL-32-15 or SL-32-06.

Range:

	Model SL-32-15	Model SL-32-06
Capacity	15,0 kg	6,0 kg
Scale interval	0,005 kg	0,002 kg
Unit price	$9,99/kg	$9,99/kg
Price	$99,99	$99,99

Tickets (Figure 12), intended for printing in the presence of the purchaser, may be hand-held or adhesive.

When price only is printed "$" or "dollars" may be printed above or below the price, or "$" may be printed before the price, either preprinted on the ticket or printed by the printer.

6.1 Sealing

(1) The printer is sealed with a stamping plug (Figure 13).

(2) The data cable is sealed to the weighing instrument with a lead and wire seal (Figure 5) or, alternatively, the serial number of the ticket printer is sealed to the weighing instrument.

7. TEC weighing instrument SL-32-15 or SL-32-06 with semi-automatic subtractive tare equal to the maximum capacity of the instrument (Figure 14). A tare indicator illuminates when a tare is entered.

In addition to the markings described in paragraph 1.5, the instrument is marked with subtractive tare in the form

T = -.....kg,

and NOT FOR RETAIL COUNTER USE.

8. A pre-packaging weighing instrument comprising a TEC weighing instrument Model SL-32-15 or SL-32-06 with semi-automatic tare, and a TEC HP 11 or HP 8 self-adhesive label printer. The printer is inhibited from printing when the load is less than 20e. The labels are similar to those shown in Figure 12 (HP 11 and HP 8 printers).

A negative weight may be displayed in conjunction with the use of the tare.

9. TEC label printer Model HP 11 with a switch to prevent the printing of the unit price and total price functions (Figure 8).

10. HP 12 Ticket Printer (Figure 15) with the TEC weighing instrument Model SL-32-15 or SL-32-06.

Range:

	Model SL-32-15	Model SL-32-06
Capacity	15,0 kg	6,0 kg
Scale interval	0,005 kg	0,002 kg
Unit price	$9,99/kg	$9,99/kg
Price	$99,99	$99,99

Tickets (Figure 16), intended for printing in the presence of the purchaser, may be hand-held or adhesive.

When price only is printed "$ or "dollars" may be printed above or below the price, or "$" may be printed before the price, either preprinted on the ticket or printed by the printer.

10.1 Sealing

(1) The printer is sealed with a stamping plug (Figure 17).

(2) The data cable is sealed to the printer and to the weighing instrument with a lead and wire seal (Figures 5 and 9) or, alternatively, the serial number of the ticket printer is sealed to the weighing instrument.

3. Test Procedures

1. Accuracy Requirements

The maximum permissible errors are:

±0,5 e for loads between zero and 500 e inclusive;

±1,0 e for loads between 501 e and 2000 e inclusive: and

±1,5 e for loads above 2000 e.

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 0,25 e and 0,75 e additional mass on the load receptor will then be 10 e and 11 e respectively.

3. Zero Range

The maximum range of operation of the tool-operated 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 rezero.

(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 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, 10 e.

When the instrument is tilted so that the bubble in the level indicator moves 2 mm, the indication 10 e should not change by more than 2 e, and when, in the tilted position, the 10 e 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, 2, 3 and 4 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 (max); above this, the indicator should be blank.

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

Note: For variant number 8, a negative weight may be displayed.

TABLE 1

Indicated weight kg	Unit price $/kg	Total 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 $/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

TABLE 3

Indicated mass kg	Unit price $/kg	Price $
0,000	00,00	00,00
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	30,51	30,51
2,000	20,03	40,06
3,000	17,00	51,00
4,000	17,00	68,00
5,000	15,00	75,00
6,000	14,00	84,00
7,000	14,00	98,00
8,000	12,00	96,00
9,000	11,11	99,99
10,000	9,99	99,90
11,000	5,00	55,00
12,000	5,00	60,00
13,000	5,00	65,00
14,000	5,00	70,00
15,000	5,00	75,00

Test Procedure - 15,000 kg Weighing Instrument and Printer with Unit Price to $99,99/kg and Price to $99,99.

3/11/80

TABLE 4

Indicated mass kg	Unit price $/kg	Price $
0,000	00,00	00,00
0,040	99,99	4,00
0,052	98,88	5,14
0,064	97,77	6,26
0,076	96,66	7,35
0,088	95,55	8,41
0,090	94,44	8,50
0,110	93,33	10,27
0,220	92,22	20,29
0,330	81,11	26,77
0,400	79,33	31,73
0,500	69,44	34,72
0,600	59,66	35,80
0,700	49,12	34,38
0,800	39,99	31,99
0,900	29,66	26,69
1,000	12,88	12,88
2,000	26,66	53,32
3,000	33,33	99,99
4,000	12,22	48,88
5,000	15,55	77,75
6,000	14,81	88,86
6,000	10,00	60,00

Test Procedure - 6,00 kg Weighing Instrument and Printer with Unit Price to $99,99/kg and to $99,99.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/80

VARIATION No 1

Pattern: TEC Model SL-32-15 Weighing Instrument

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

Variant 11 submitted by:

Colbro Stuart Walker,
56-60 Parramatta Road,
Lidcombe, New South Wales, 2141.

1. Description of Variant 11

TEC Model HP-8 label printer with modified housing, as shown in Figure 18.

8/3/82

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/80

CHANGE No 1

The approval of the

TEC Weighing Instrument Model SL-32-15

given in Certificate of Approval No 6/4D/80 dated 3/11/80 is altered as follows:

Add to Variant 10, after the words for retail counter use,

"or, when fitted with tare, for prepackaging use."

Signed

Executive Director

19/1/81

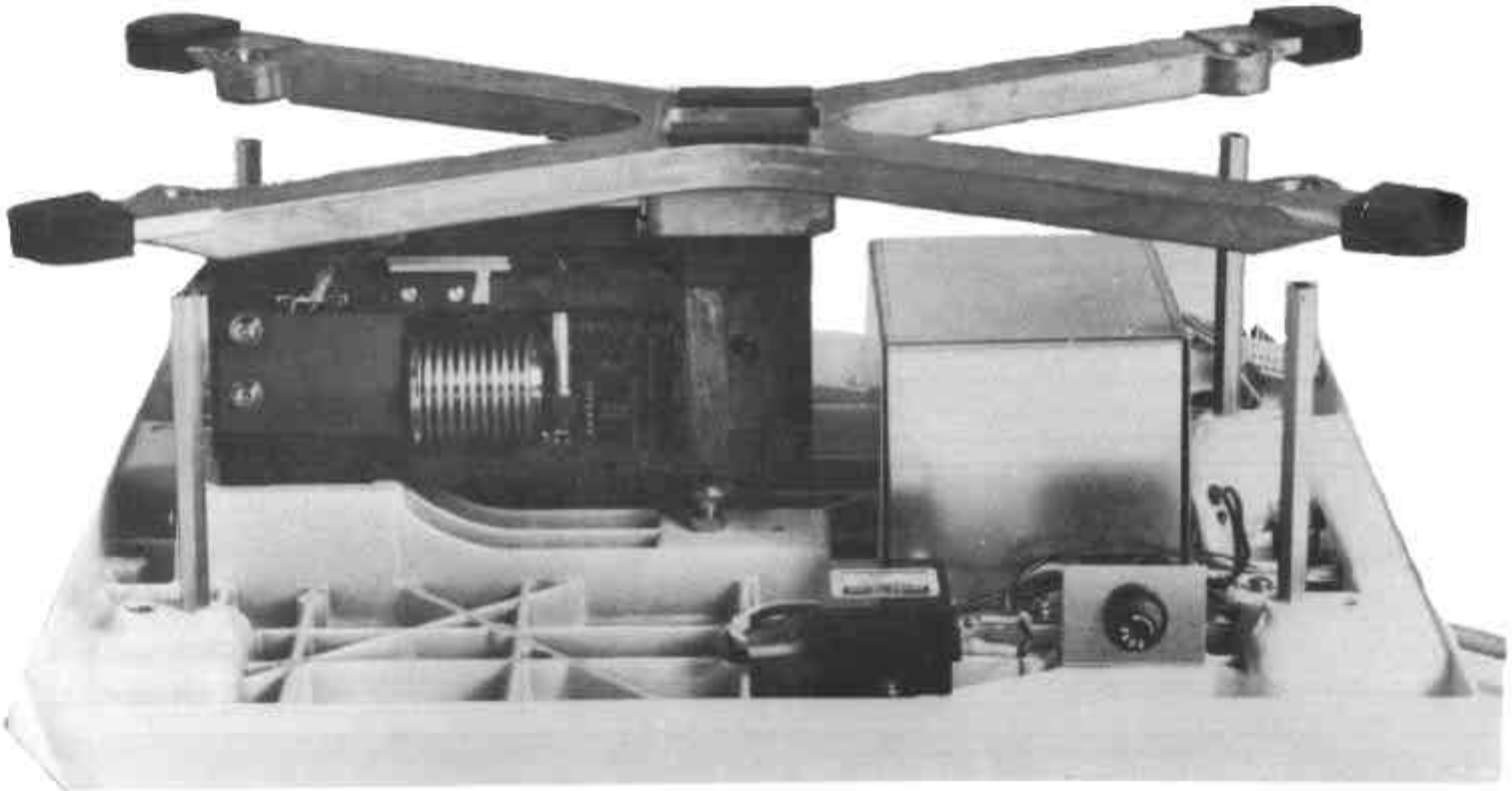
FIGURE 6/4D/80 - 1

TEC SL-32-15 — Vendor's Side

FIGURE 6/4D/80 - 2

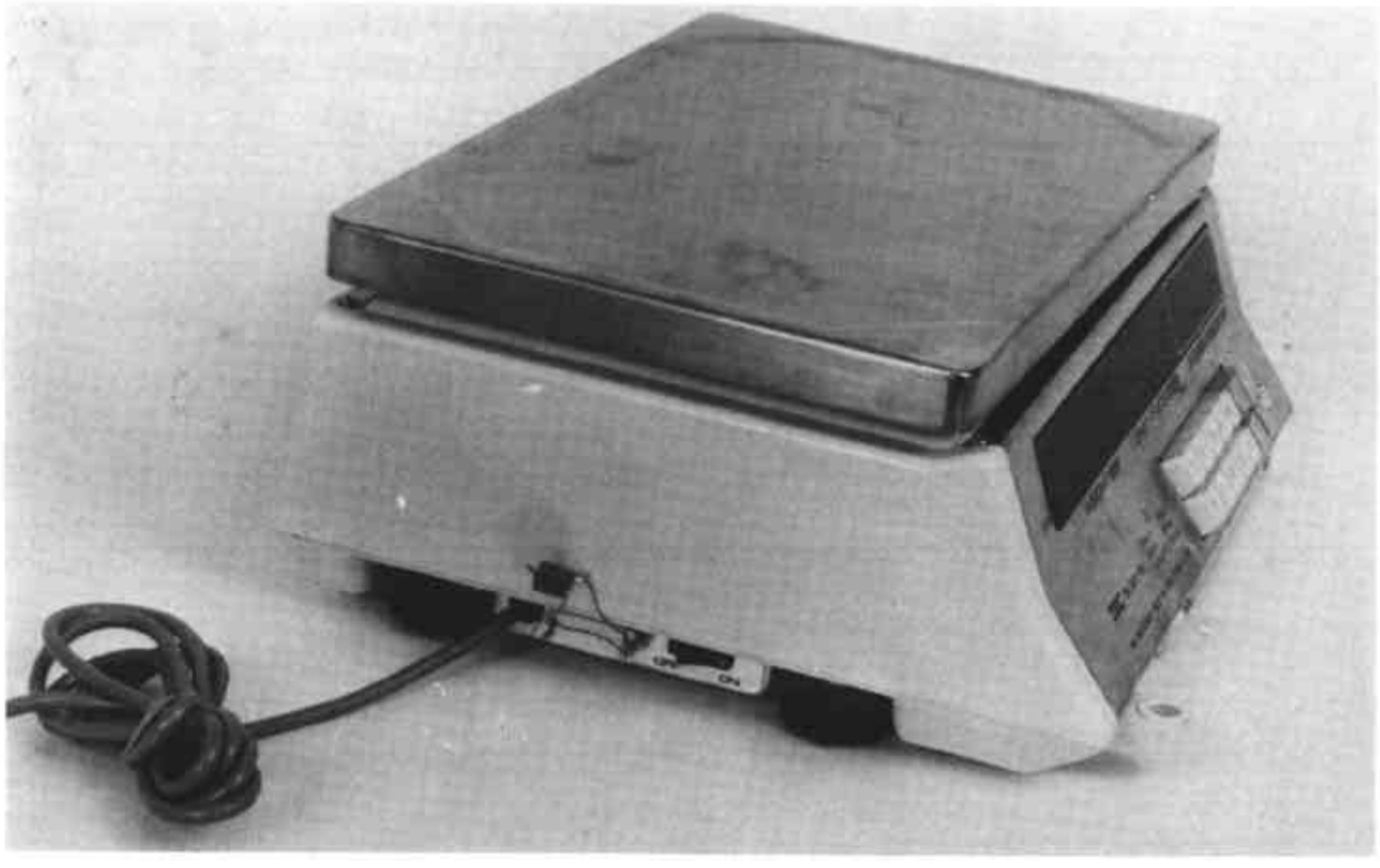
TEC SL-32-15 — Purchaser's Side

FIGURE 6/4D/80 - 3



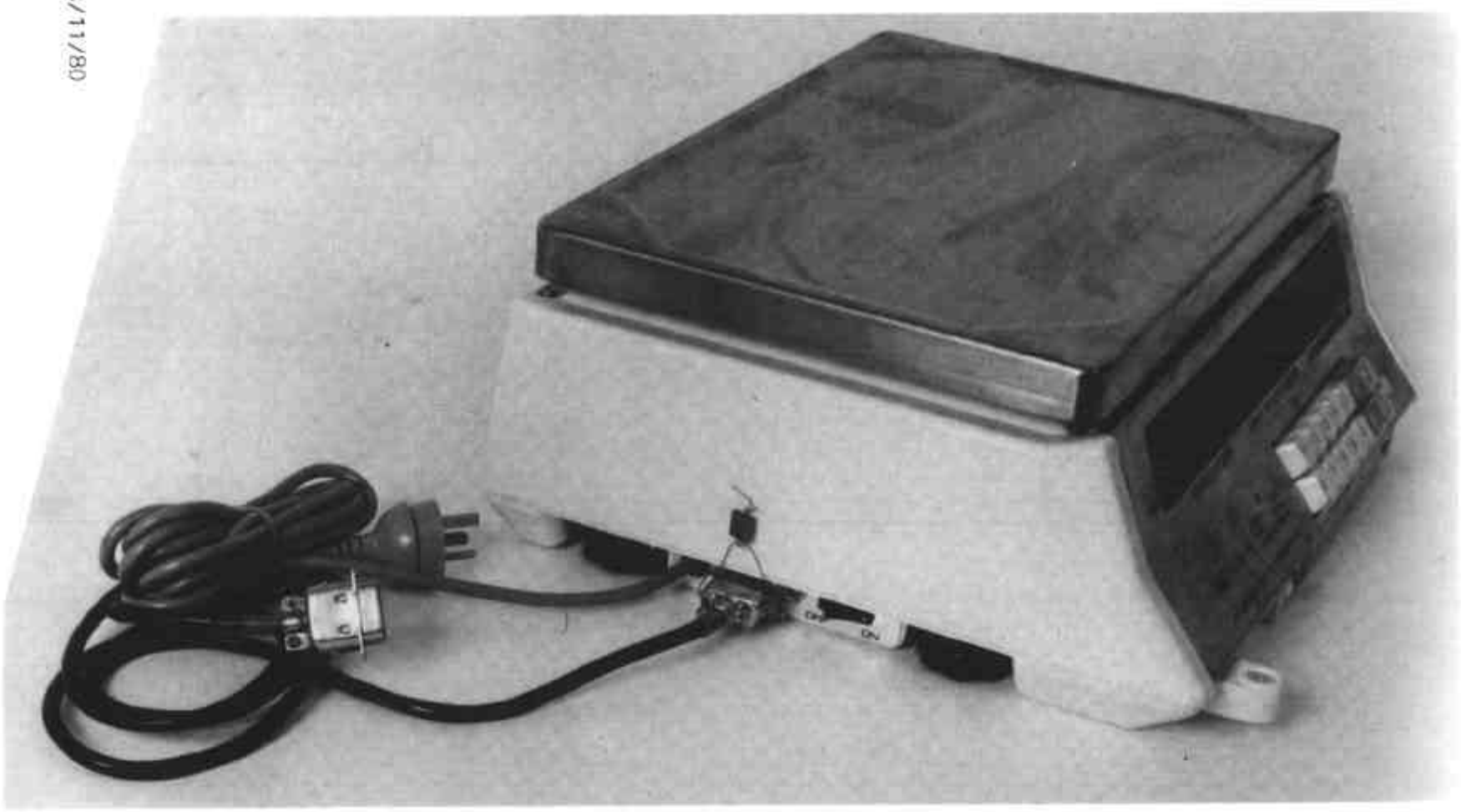
TEC SL-32-15 — Load Cell With Load-receptor Spider

FIGURE 6/4D/80 - 4



Sealing of Output Socket and Cover

FIGURE 6/4D/80 - 5



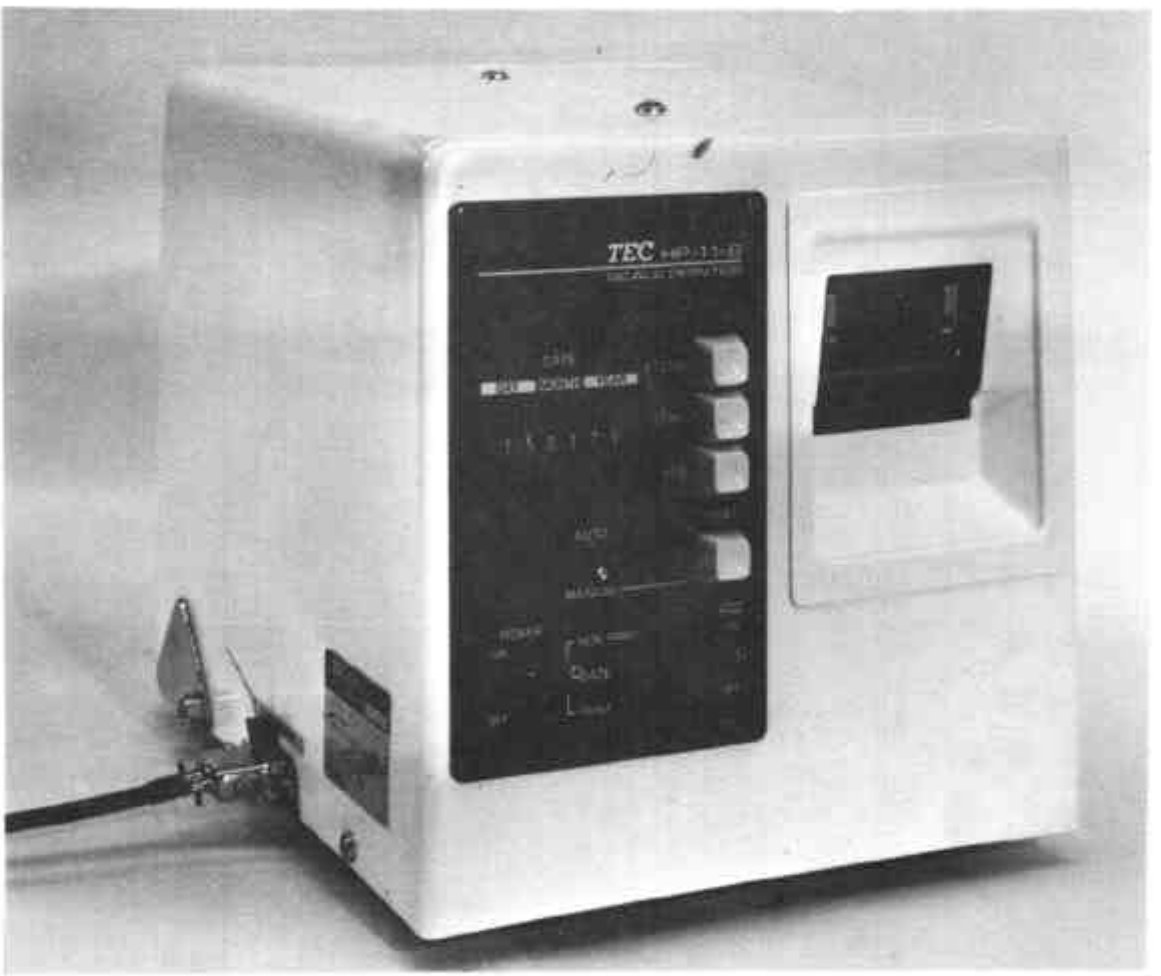
Sealing of Output Plug and Cover

FIGURE 6/4D/80 - 6

Purchaser's Indicator in Separate Housing

27/10/78

FIGURE 6/4D/80 - 7



Ticket Printer

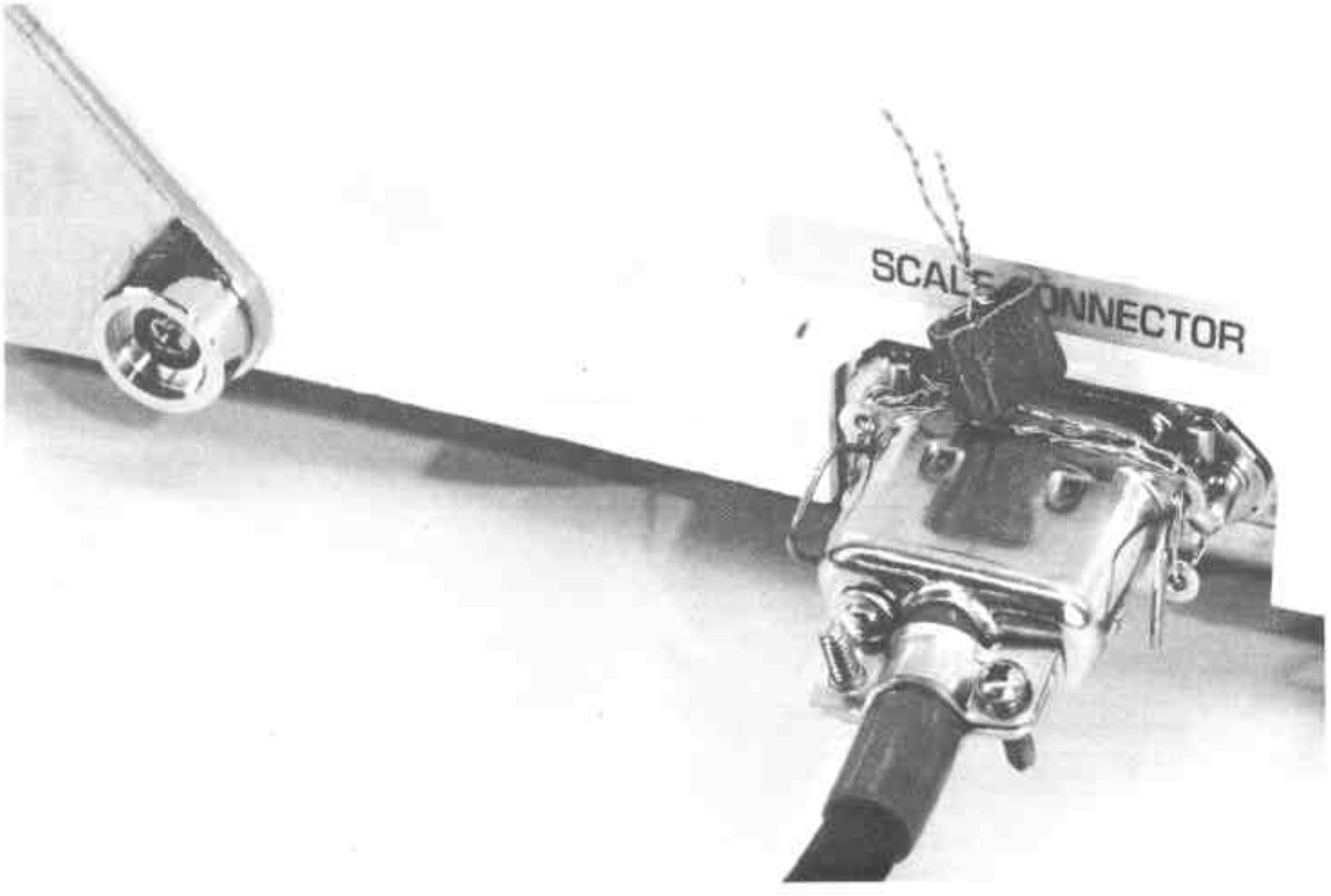
15/5/79

FIGURE 6/4D/80 - 8

Control Panel HP 11 Printer

3/11/80

FIGURE 6/4D/80 - 9

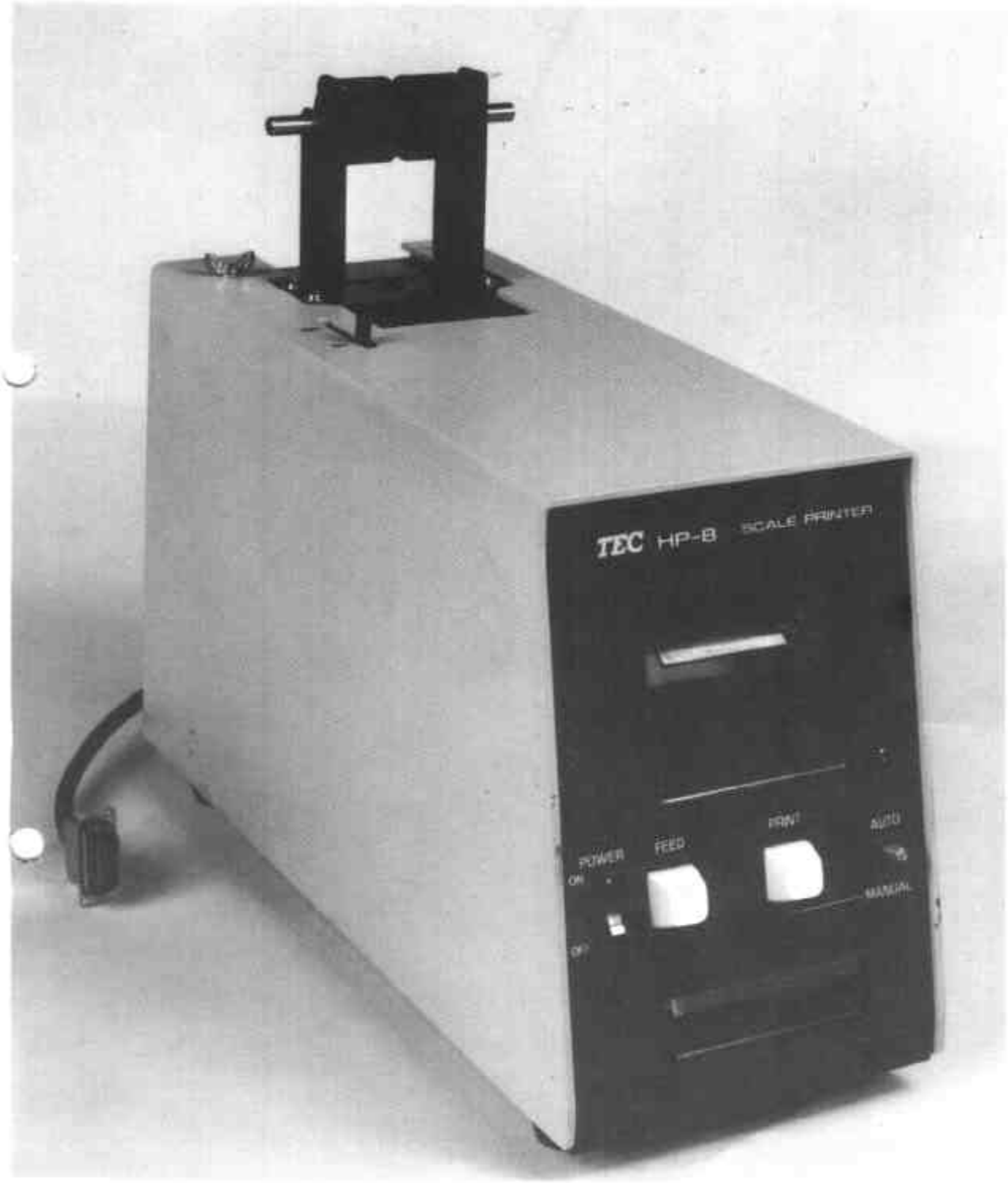


Ticket Printer, showing Main Seal and Sealing of Output Cable

FIGURE 6/4D/80 - 10

TEC SL-32-15 Weighing Instrument with Separate Keyboard

FIGURE 6/4D/80 - 11



TEC HP8 Ticket Printer

15/9/79

FIGURE 6/4D/80 - 12

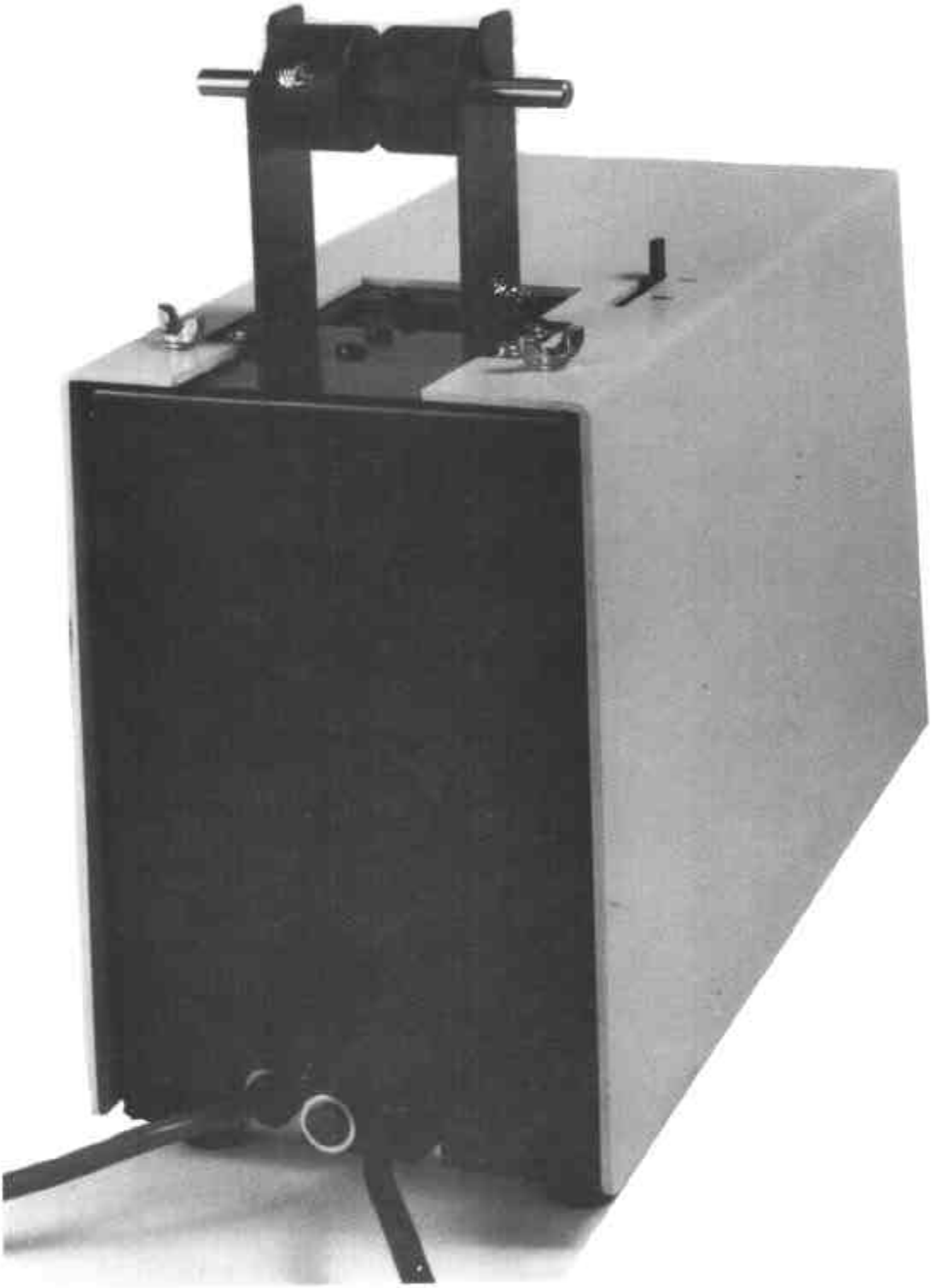
Before Printing

After Printing

Sample Tickets, HP 8 and HP 11 Printer

3/11/80

FIGURE 6/4D/80 - 13



HP8 Printer — Rear View Showing Sealing

15/9/79

FIGURE 6/4D/80 - 14

3/11/80

TEC Model SL-32-15 with Tare

HP 12 Printer

3/11/80

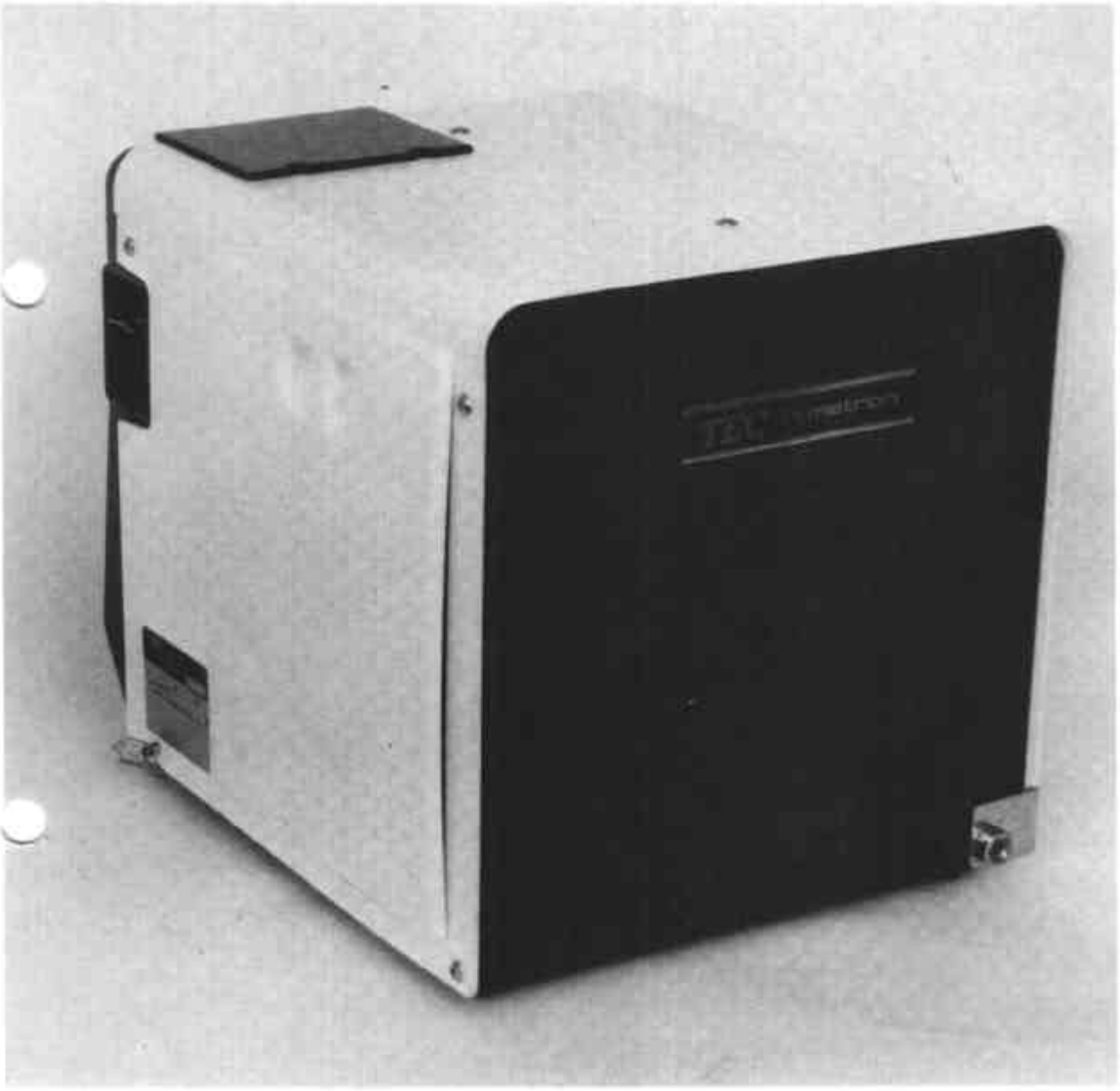
Before Printing

After Printing

Sample Tickets, HP 12 Printer

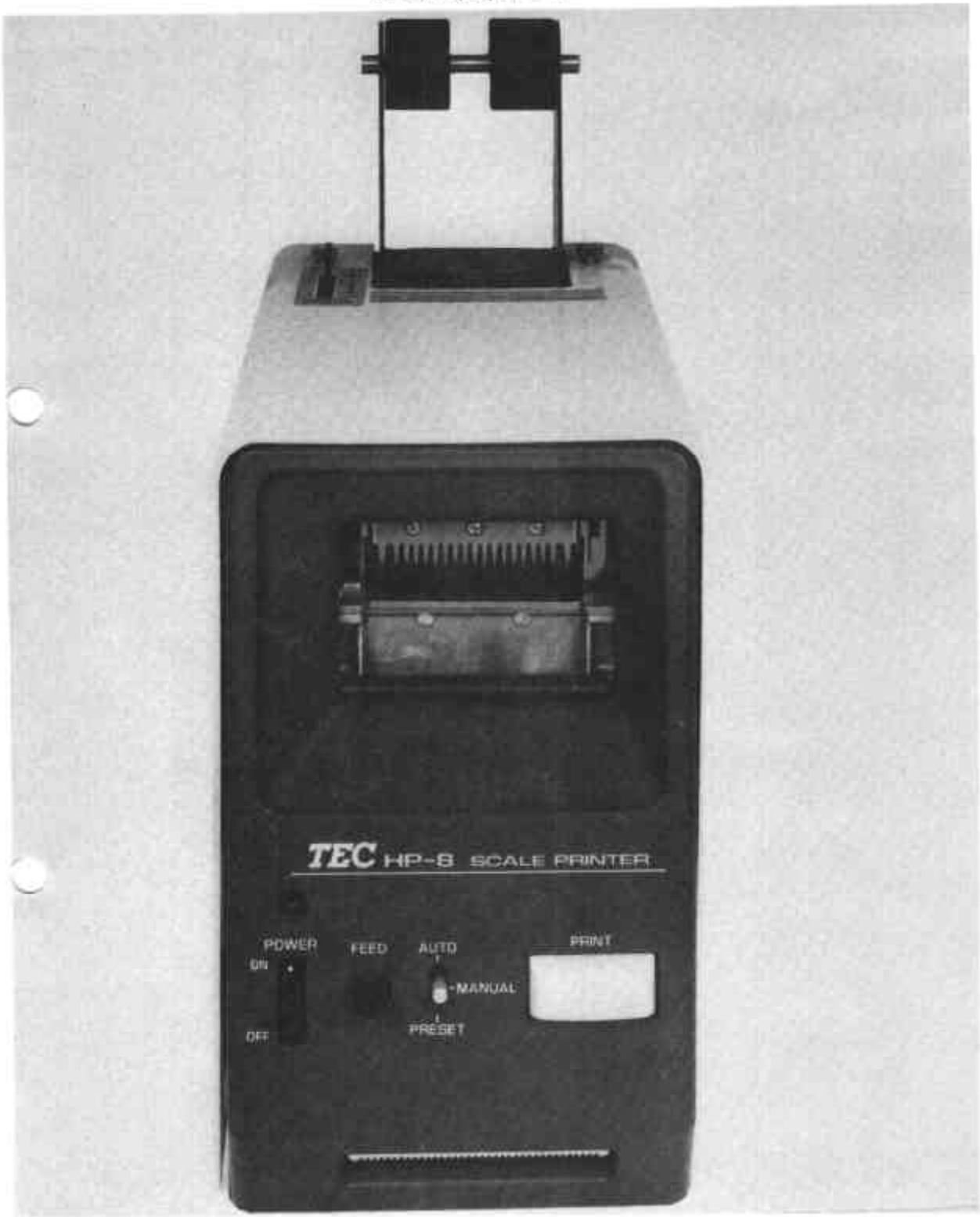
3/11/80

FIGURE 6/4D/80 - 17



HP 12 Printer Showing Lead-Plug Seal

3/11/80



TEC Model HP-8 Label Printer Showing
Modified Housing

8/3/82