



NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/4D/204

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

TEC Weighing and Label Printing Instrument Model HP-61

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

is suitable for use for trade.

The approval of the pattern is subject to review on or after 1/2/86.

All instruments purporting to comply with this approval shall be marked NSC No 6/4D/204.

Relevant drawings and specifications are lodged with the Commission.

Signed

Executive Director

Descriptive Advice

Pattern: approved 7/5/81

- A self-indicating weighing and printing instrument of 15.025 kg by 0.005 kg capacity, with price-computing in 1c increments to \$99.99/kg, and price to \$999.99.

Technical Schedule No 6/4D/204 dated 5/6/81 describes the pattern.

5/6/81



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/204

Pattern: TEC Weighing and Printing Instrument Model HP-61

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

1. Description of Pattern

1.1 General

The pattern is a self-indicating price-computing weighing and printing instrument of capacity 15.025 kg (Figures 1 and 2). It comprises a weighing unit and a computing and printing unit.

The load receptor of the weighing unit is directly connected to the load cell (Figure 3).

1.2 Range

Capacity	15.025 kg
Scale interval	0.005 kg
Unit Price	\$99.99/kg in 1c increments
Price	\$999.99 in 1c increments
Subtractive Tare	-9.995 kg

1.3 Zero

The instrument will re-zero automatically to within $\pm 0.25e$ whenever it comes to rest within $0.5e$ of zero, and the indicator marked ZERO will be illuminated. Pressing the button marked ZERO will re-zero the instrument when zero has changed by more than $1e$, and also after power is switched on.

1.4 Tare

- (a) Semi-automatic tare is selected by pressing button marked T.
- (b) Tare can be digitally preset by pressing button marked PT followed by the number of scale intervals required.

In both cases, the tare is limited to -9.995 kg.

1.5 Display Check

Switching on power to the instrument causes the digital indications to display 0 to 9 sequentially, all indicator lights to flash, and then all to blank until the ZERO button is pressed.

1.6 Levelling

The weighing-unit has a level indicator, four adjustable feet and a notice advising that the unit must be level when in use.

1.7 Marking

The nameplate is marked with the following data:

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Manufacturer's name
 Serial number of instrument
 NSC approval number in the form:
 Accuracy class in the form:
 Maximum capacity in the form:
 Minimum capacity in the form:
 Verification scale interval in the form:
 Maximum subtractive tare in the form:

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III

Maxkg*

Minkg*

$d_d = e$ *

T = -kg

and the instrument is marked NOT FOR RETAIL COUNTER USE.

1.6 Sealing

- (a) The retaining screw of the access cover of the printing unit is sealed with lead and wire as in Figure 4.
- (b) The top cover of the weighing unit is sealed with lead and wire as in Figure 5.
- (c) The plug of the data cable is sealed to the socket of the weighing unit with lead and wire (Figure 4).

* These markings are repeated on the reading face.

TEST PROCEDURE No 6/4D/204

1. Accuracy Requirements

The maximum permissible errors are

- $\pm 0.5e$ for loads between 0 and 500e;
- $\pm 1e$ for loads between 501e and 2000e; and
- $\pm 1.5e$ for loads 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 push-button zero device should not exceed 4% of the capacity of the instrument ($\pm 2\%$ 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 push button; the instrument should not re-zero.
- (b) Reduce the load to, say, 1.5% of maximum capacity and again press the zero push button; 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, 10e.

When the instrument is tilted so that the bubble in the level indicator moves 2 mm, the indication (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.

5. 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 figures should be indicated exactly as in the table 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) 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, or a negative weight may be displayed.

TABLE 1

<u>Indicated Mass</u>	<u>Unit price</u>	<u>Total price</u>
kg	\$/kg	\$
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



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NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/204

CHANGE No 1

The following change is made to the description of the
TEC Weighing and Label Printing Instrument Model HP-61
given in Technical Schedule No 6/4D/204 dated 5/6/81:

Figure 6 is replaced by the attached figure.

Signed

Executive Director

4/9/81

FIGURE 6/40/204 - 1

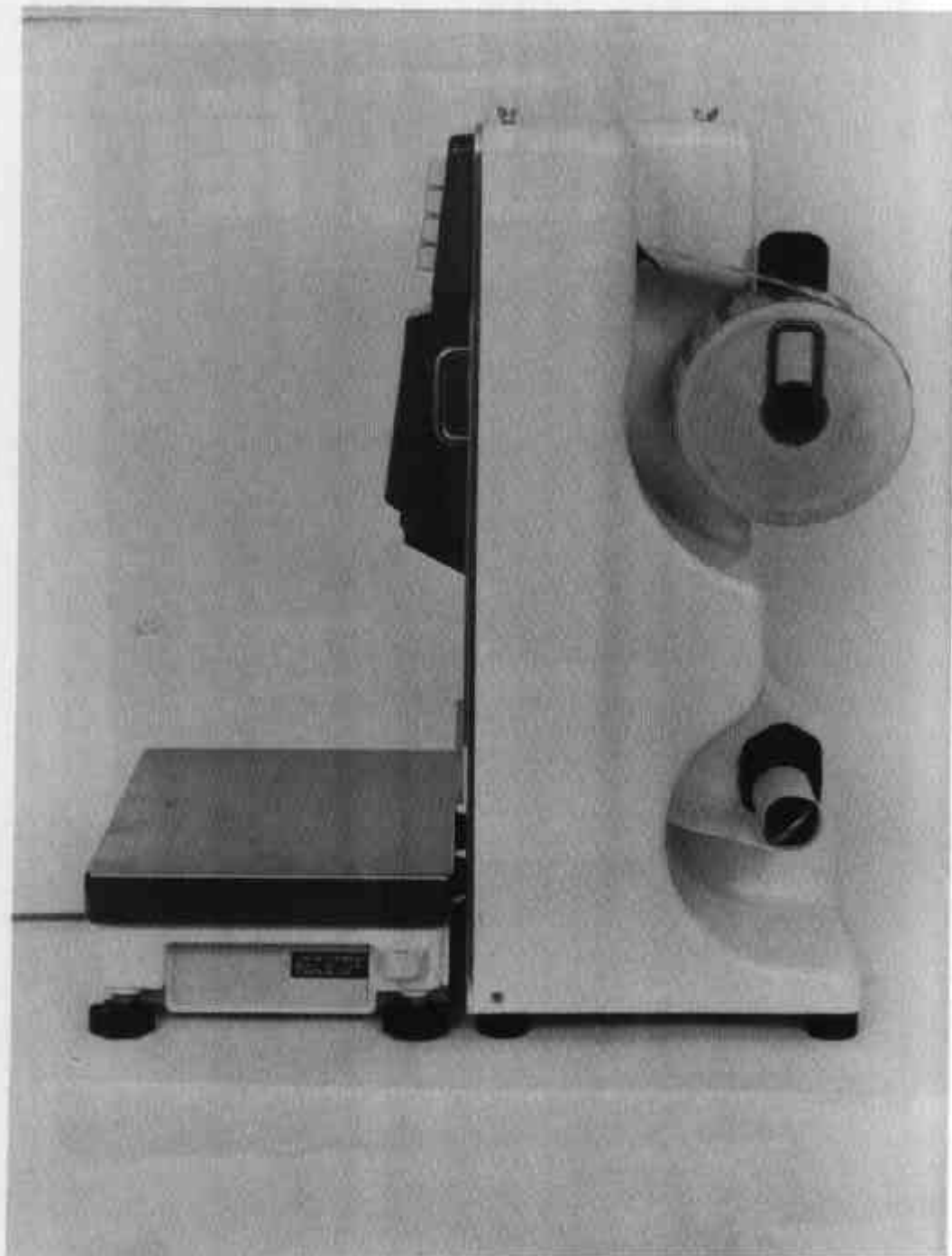


TEC Model HP-61

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FIGURE 6/4D/204 - 2

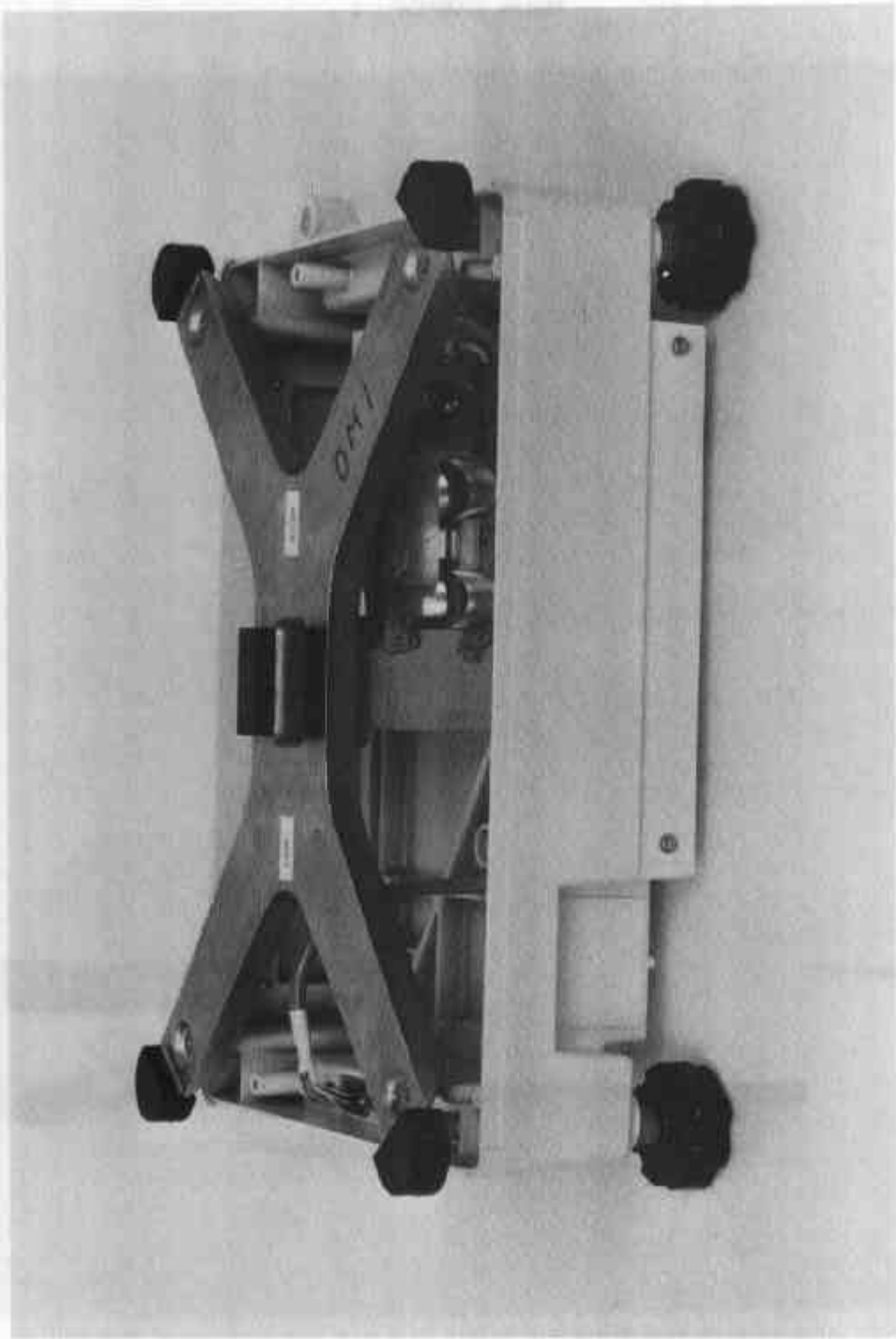


Side View

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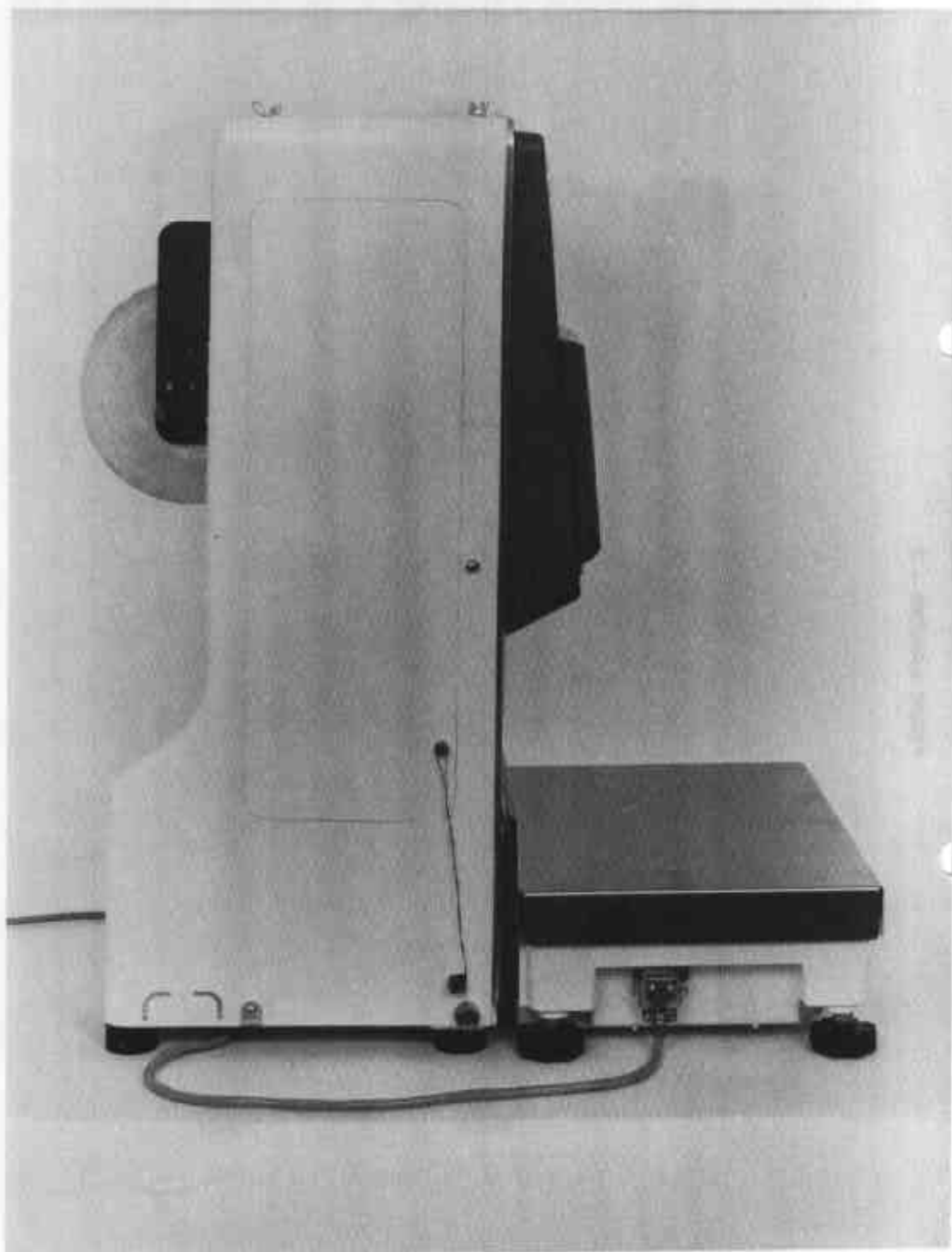
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FIGURE 6/40/204 - 3



Mounting of Load Cell

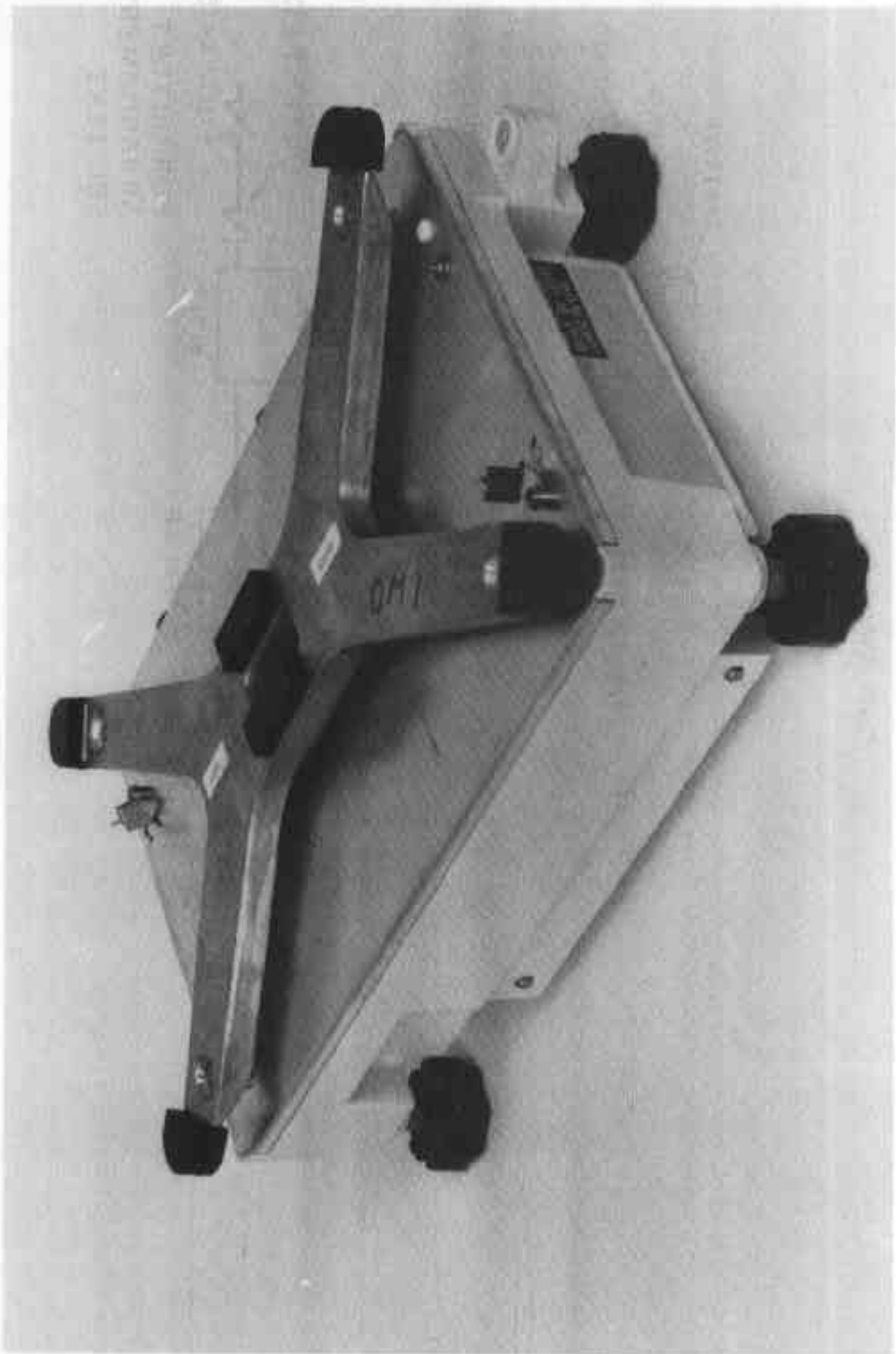
FIGURE 6/40/204 - 4



Side view showing Sealing of Printer and Data Cable

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FIGURE 6/40/204 - 5



Weighing Unit without Load Receptor showing Sealing

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NET WEIGHT	PRICE PER kg
	\$
PACKED	USE BY
THANK YOU	

(a) Before printing

NET WEIGHT	PRICE PER kg
0.610 kg	\$ 2.50 1.53
PACKED	USE BY
THANK YOU	

(b) After printing

Sample Ticket (actual size)