



CANCELLED

NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/4D/53

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

Sanitary Model TR 1 Weighing Instrument

submitted by Franklin Electric (Aust.) Pty Ltd,  
Frankston Road,  
Dandenong, Victoria, 3175,

are suitable for use for trade.

The approval of the pattern and variants is subject to review on or after 1/9/81.

Instruments purporting to comply with this approval shall be marked NSC No 6/4D/53.

Relevant drawings and specifications are lodged with the Commission.

Signed

Executive Director

Descriptive Advice

Pattern: approved 13/8/76

- Sanitary model TR 1 price-computing weighing and labelling instrument of 9.99 kg capacity by 0.01 kg scale intervals.

Technical Schedule No 6/4D/53 dated 21/12/76 describes the pattern.

Variant: approved 5/5/77

1. With knob-operated zero adjustment.

Technical Schedule No 6/4D/53 Variation No 1 dated 31/5/77 describes variant 1.

Variant: approved 16/9/82

2. Model TR 2 of 12 kg capacity by 0.005 kg scale intervals with price-computing and ticket printing in 1c increments to \$99.99/kg and total price to \$99.99.

Technical Schedule No 6/4D/53 Variation No 2 dated 6/10/82 describes variant 2.

6/10/82

...../2

Filing Advice

Certificate of Approval No 6/4D/53 dated 31/5/77 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

- Certificate of Approval No 6/4D/53 dated 6/10/82
- Technical Schedule No 6/4D/53 dated 21/12/76 (including Table 1 and Special Tests)
- Technical Schedule No 6/4D/53 Variation No 1 dated 31/5/77
- Technical Schedule No 6/4D/53 Variation No 2 dated 6/10/82
- Test Procedure No 6/4D/53 Variation No 2 dated 6/10/82
- Figures 1 to 6 dated 21/12/76
- Figures 7 to 14 dated 6/10/82.

6/10/82



# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 6/4D/53

Pattern: Sanitary Weighing Instrument Model TR1

Submittor: Franklin Electric (Aust.) Pty Ltd,  
Frankston Road,  
Dandenong, Victoria, 3175.

Date of Approval: 13 August 1976

All instruments conforming to this approval shall be marked "NSC No 6/4D/53".

### Description:

The pattern (see Figures 1 and 2) is a price-computing ticket-printing prepackaging counter machine of maximum capacity 9,99 kg by 0,01-kg graduations and a prepackaging ticket printer printing the weight to 9,99 kg by 0,01-kg increments, with price computing in 1-c increments from 1 c to \$9,99 per kg and total price to \$99,80.

The weighing mechanism (see Figures 3, 4 and 5) is a 2-lever system with a spring-resistant mechanism. Graticules, one marked with a scale for optical reflection and the other a digital code, are driven from the nose-end of one main lever by a rack and pinion. The scale is reflected on to a ground-glass screen on the front of the instrument. The scale is denominated "kg".

An additive ungraduated taring device of capacity up to 0,22 kg (see Figures 2 and 3) is operated by a knob on the top of the weighing unit. A light marked "manual tare set" on the weighing unit is illuminated whenever a tare value greater than 0,25d is selected.

The 999-increment digital code on the transparent graticule is projected on to a set of photo-cells which convert the displacement of the graticule into a coded weight signal (see Figures 3 and 4).

The total price is calculated in the computer unit from the weight signal and the unit-price signal from the unit-price setting knobs on the ticket-printing unit. The weight, unit price and total price are printed when the label-ejection lever is pressed. A sample ticket is illustrated in Figure 6.

The weighing unit is provided with a level indicator and three

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

The instrument is marked adjacent to the weight reading face:

(III)

Max	=	9,99 kg
Min	=	0,20 kg
d = e	=	0,01 kg
d <sub>c</sub> = e	=	0,01 kg
T	=	+ 0,22 kg

and "not for retail counter use".

Special Tests:

1. Zero Range - check that the range of the zero adjustment is not more than 0,4 kg and that when the instrument indicates zero the adjustment is within 0,02 kg of the centre of its range.
2. Level Sensitivity - when the instrument is tilted so that the bubble in the level indicator moves 2 mm, the zero should not change by more than 2 graduations, and when zero is reset in the tilted position the instrument should satisfy the weighing-accuracy specifications, that is,  $\pm \frac{1}{2}$  graduation for the first 500 graduations and  $\pm 1$  graduation for graduations over 500 and up to 990 graduations.
3. Price-computing Accuracy - the indications and printing of weight, unit price and total price as listed in Table 1 will indicate that the price-computing and weight circuits are functioning correctly. The exact figures should be indicated as rounding is effected within the computer.

Note: This test does not establish correct weight indications; separate tests of the analogue weight indication and ticket printer are necessary. A test in accordance with the Commission's recommended testing procedures for the elimination of rounding errors — Document 104 — should be applied to the printed weight indications.

4. Range of Indication — the maximum weight indicated or printed should not exceed the maximum capacity; above this weight the indicator should be blank and tickets should not be printed. The indicator should be blank and no tickets should be printed below zero.

TABLE 1

Indicated weight kg	Price/kg \$	Total price \$
0,000	0,00	0,00
0,200	9,09	1,82
0,210	9,98	2,10
0,220	9,97	2,19
0,230	9,96	2,29
0,240	9,99	2,39
0,250	9,93	2,48
0,260	9,93	2,58
0,270	9,92	2,68
0,280	9,91	2,77
0,290	9,90	2,87
0,300	9,89	2,97
0,400	9,79	3,92
0,500	9,64	4,82
0,600	9,59	5,75
0,700	9,49	6,64
0,800	9,39	7,51
0,900	9,29	8,36
1,000	0,19	0,19
2,000	1,09	2,18
3,000	2,99	8,97
4,000	3,99	15,96
5,000	4,99	24,95
6,000	5,99	35,94
7,000	6,99	48,93
8,000	7,00	56,00
9,000	8,00	72,00
9,990	9,00	89,91
9,990	7,00	69,93
9,990	9,99	99,80

Test Procedure — 9,99 kg by 0,010-kg Instrument



# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/53

VARIATION No 1

Pattern: Sanitary Weighing Instrument Model TR1

Submitter: Franklin Electric (Aust.) Pty Ltd,  
Frankston Road,  
Dandenong, Victoria, 3175.

Date of Approval of Variation: 5 May 1977

The modification described in this Schedule applies to the pattern described in Technical Schedule No 6/4D/53 dated 21 December 1976.

All instruments conforming to this approval shall be marked "NSC No 6/4D/53".

Description:

The approved modification provides for a knob-operated zero adjustment. The knob is engaged with the zero adjuster by pushing it down against a spring.

31/5/77



# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/53

VARIATION No. 2

Pattern: Sanitary Model TR 1 Weighing Instrument

Submittor: Franklin Electric (Aust.) Pty Ltd,  
Frankston Road,  
Dandenong, Victoria, 3175.

1. Description of Variant 2

1.1 General

A model TR 2 price-computing and labelling instrument (Figure 7) of capacity 12 kg by 0.005 kg scale intervals with price-computing in 1c increments to \$99.99/kg and total price to \$99.99. Unit prices may be entered by means of four rotary switches on the labelling unit.

The weighing unit is similar to that used in the pattern.

A sample label is shown in Figure 14.

1.2 Zero

Operation of a tool-operated zero adjusting screw on the weighing unit allows zero to be balanced to within 0.2e, indicated by ZERO lights illuminating on both the weighing and labelling units (Figure 8).

The NULL INDICATOR adjacent to the zero adjusting screw is for service use only and may or may not be operational when the instrument is in normal use.

When in normal use, the instrument operates in zero track mode and maintains zero to within 0.1e. Zero track may be disabled by an internal switch but only for service adjustment. The ZERO TRACK light on the labelling unit is illuminated when zero track is operative.

1.3 Tare

1.3.1 Semi-Automatic Tare

There is a semi-automatic push button subtractive tare of capacity 470 g, incorporated in the labelling unit (Figure 8). Provided that the mass on the load receptor exceeds 0.5e when the push button marked AUTO TARE is depressed and released, the lights marked TARE IN and ZERO MONITOR illuminate, and the mass indicator indicates zero. When a tared mass is removed from the load receptor a negative mass is indicated. The entered tare may be cancelled by operating the push button either with the tared mass on or off the load receptor.

1.3.2 Digital Tare

There is a digital tare of capacity 95 g (Figure 8) which allows a tare to be entered in whole numbers of scale intervals up to 95 g. Digital tare can only be entered when there is no load on the receptor. Entry of a digital tare, indicated by the TARE IN light illuminating, replaces an already entered semi-automatic tare. If semi-automatic tare is attempted with a digital tare already entered it will be ineffective.

1.4. Level Adjustment

The weighing unit has a level indicator and three levelling legs. Adjacent to the level indicator is a notice advising that the instrument must be level when in use.

1.5 Marking

The following markings appear on the weighing instrument or all may appear adjacent to the mass indicator on the labelling unit (Figure 8):

Manufacturers name or mark	
Serial number	
NSC approval number	NSC No 6/4D/53
Accuracy class	<u>III</u>
Maximum capacity	Max = 12 kg*
Minimum capacity	Min = 0.100 kg*
Verification scale interval	e = d = 0.005 kg*
Maximum subtractive tare	T = - 470 g

In addition the weighing instrument is marked NOT FOR RETAIL COUNTER USE and the serial number of the labelling unit is marked on the weighing instrument (Figures 9 and 10).

1.6 Sealing

1.6.1 Weighing Unit

A lead and wire seal under the load receptor secures the weighcell cover plate (Figure 11). The top cover of the head of the weighing unit is secured by a stamping plug and the side covers by NYLOC nuts and screws (Figure 12).

1.6.2 Labelling Unit

Two sealing plugs secure the covers (Figure 13).

1.7 Segment Check

On applying power the mass indicator flashes all 8's and then blanks until the load receptor is disturbed.

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\* These markings must appear adjacent to the mass indicator on the labelling unit, if not already there.



## TEST PROCEDURE No 6/40/53

### VARIATION No 2

All load applications 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 inclusive;
- ±1e for loads between 501 and 2000e; and
- ±1.5e for loads above 2001e.

#### 1. Zero Test

As an automatic zero tracking device is fitted, zero should be checked as described in Document 104, with a load of, 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 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; it should not be possible to obtain zero balance by means of the zero adjustment.
- (b) Reduce the load to, say, 1.5% of maximum capacity; it should now be possible to obtain zero.

#### 3. Price-Computing Accuracy

The indications of mass, and printing of the mass, unit price and total price as listed in Table 2 will indicate that the price computing circuitry is operating correctly. The exact figures in the table should be indicated.

#### 4. Range of Indication

The maximum mass indicated should not exceed the marked capacity (Max) by more than 10e; above this indicated mass the indications should be blank and the printer will be prevented from printing and issuing labels.

Below zero the mass indicator will blank and the printer will not print or issue labels.

#### 5. Taring

Using semi-automatic push-button tare, it should be possible to reset the mass indicator to zero within 0.2e at any load within its tare capacity. This may be checked as described for the Zero Test.

Operation of the push-button should not indicate that a tare has been selected until a mass of more than 0.5e has been placed on the load receptor.

#### 6. Load Test

Test loads are to be applied to the instrument up to maximum capacity in not less than 5 approximately equal steps, followed by decreasing loads of not less than 5 approximately equal steps to zero load. The instrument should display these loads within the applicable tolerance as listed above.

TABLE 2

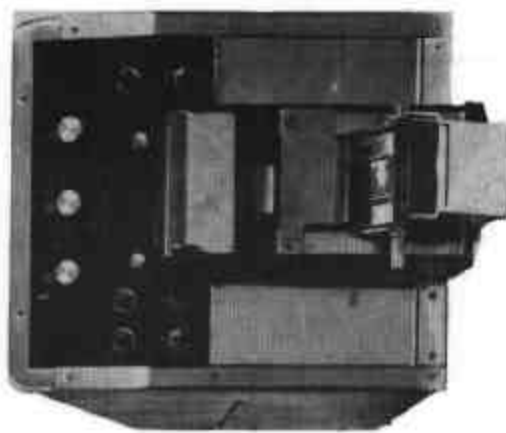
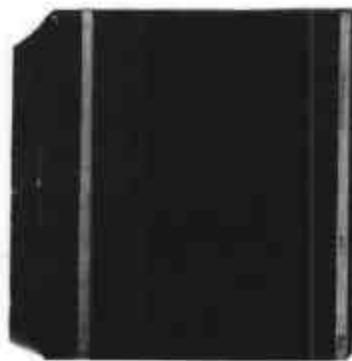
<u>Indicated Mass</u>	<u>Unit Price</u>	<u>Price</u>
kg	\$/kg	\$
0.000	00.00	00.00
0.100	99.99	10.00
0.200	79.77	15.95
1.000	30.51	30.51
9.000	11.11	99.99
12.000	5.00	60.00

Test Procedure - 12.000 kg By 0.005 kg Instrument With Unit Price

To \$99.99/kg And Total Price To \$99.99

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FIGURE 6/4D/53 - 1



Sanitary Model TR1

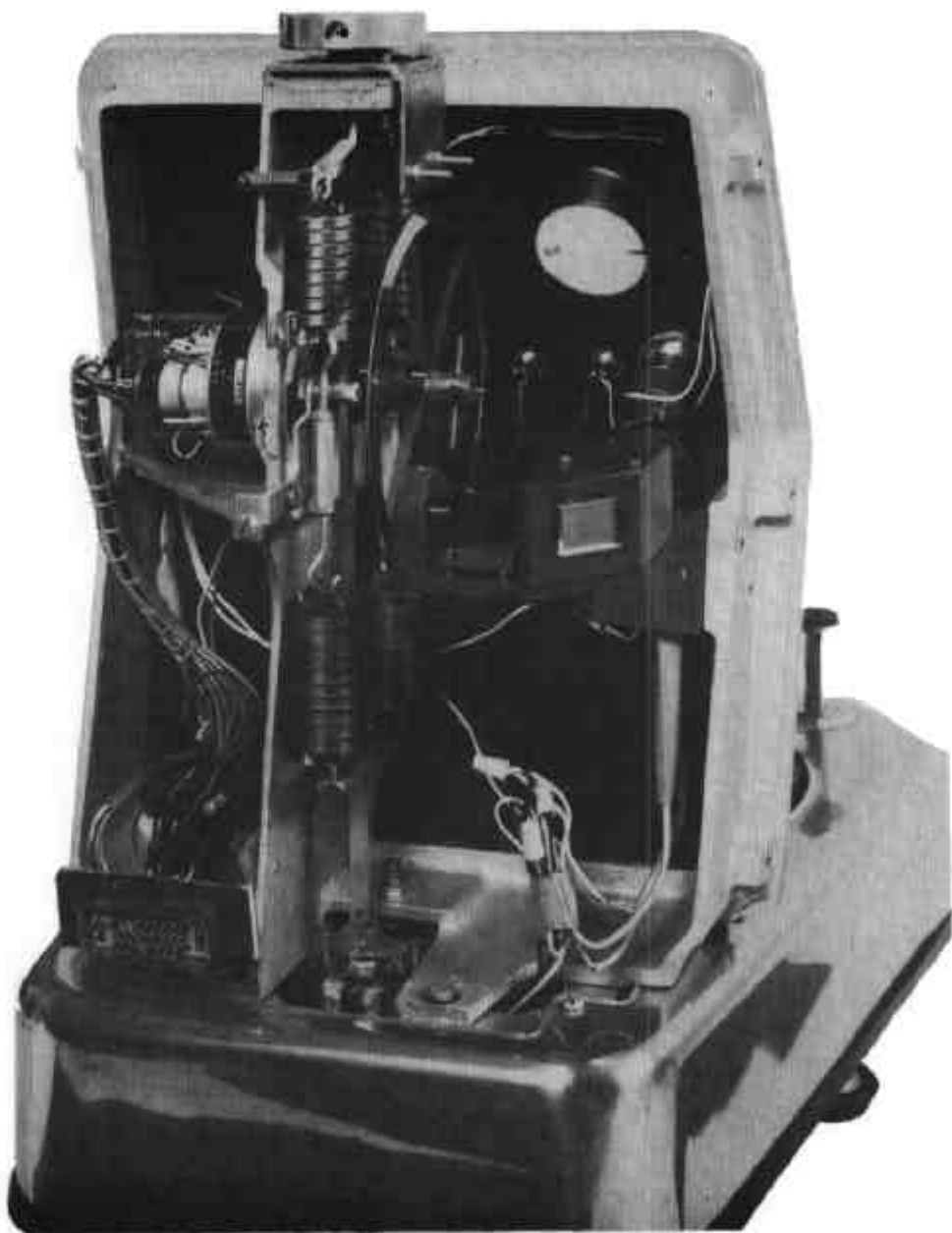
21/12/76

FIGURE 6/4D/53 - 2



21/12/76

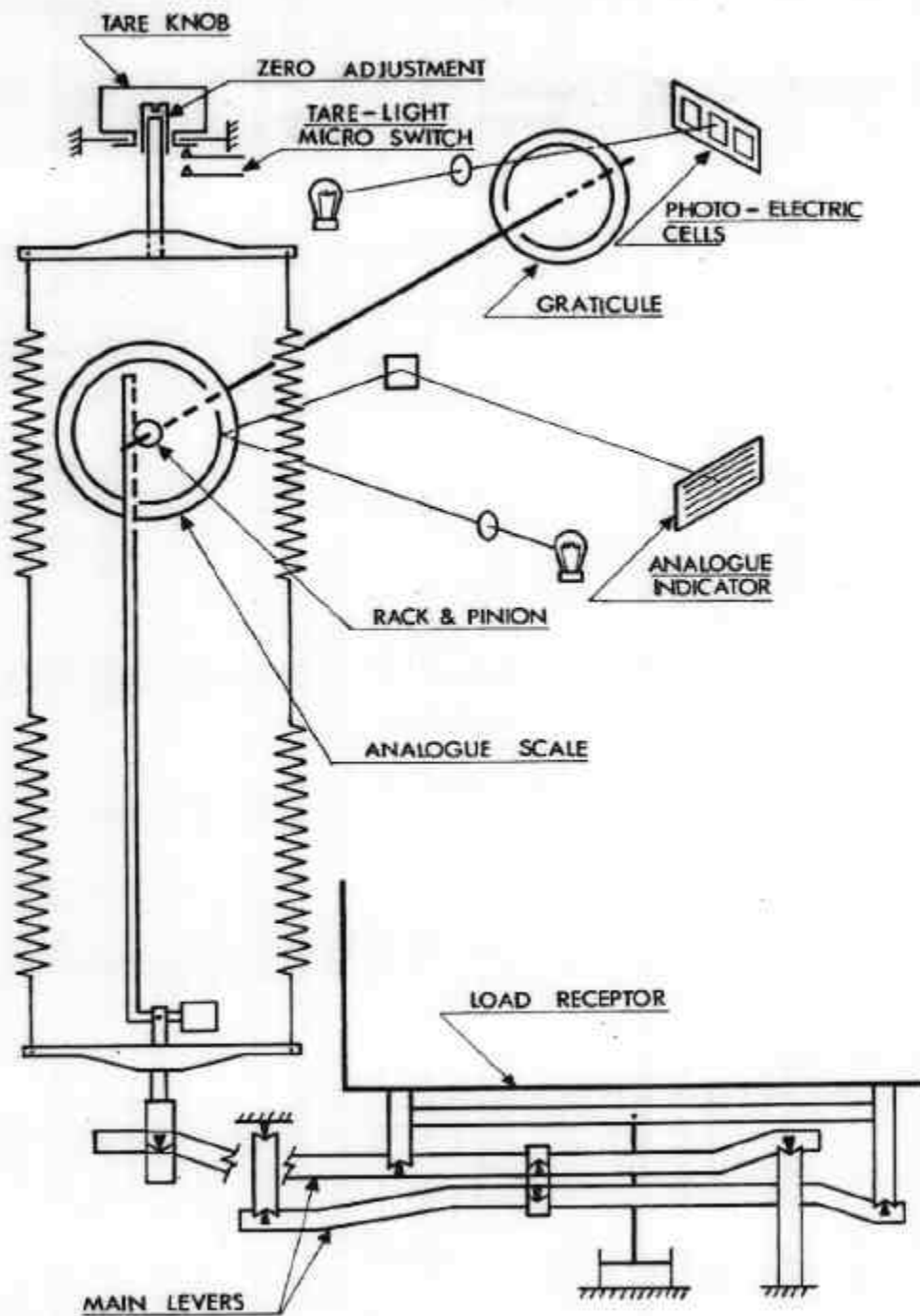
FIGURE 6/4D/53 - 3



Sanitary TR1 — Spring Resistant and Graticule

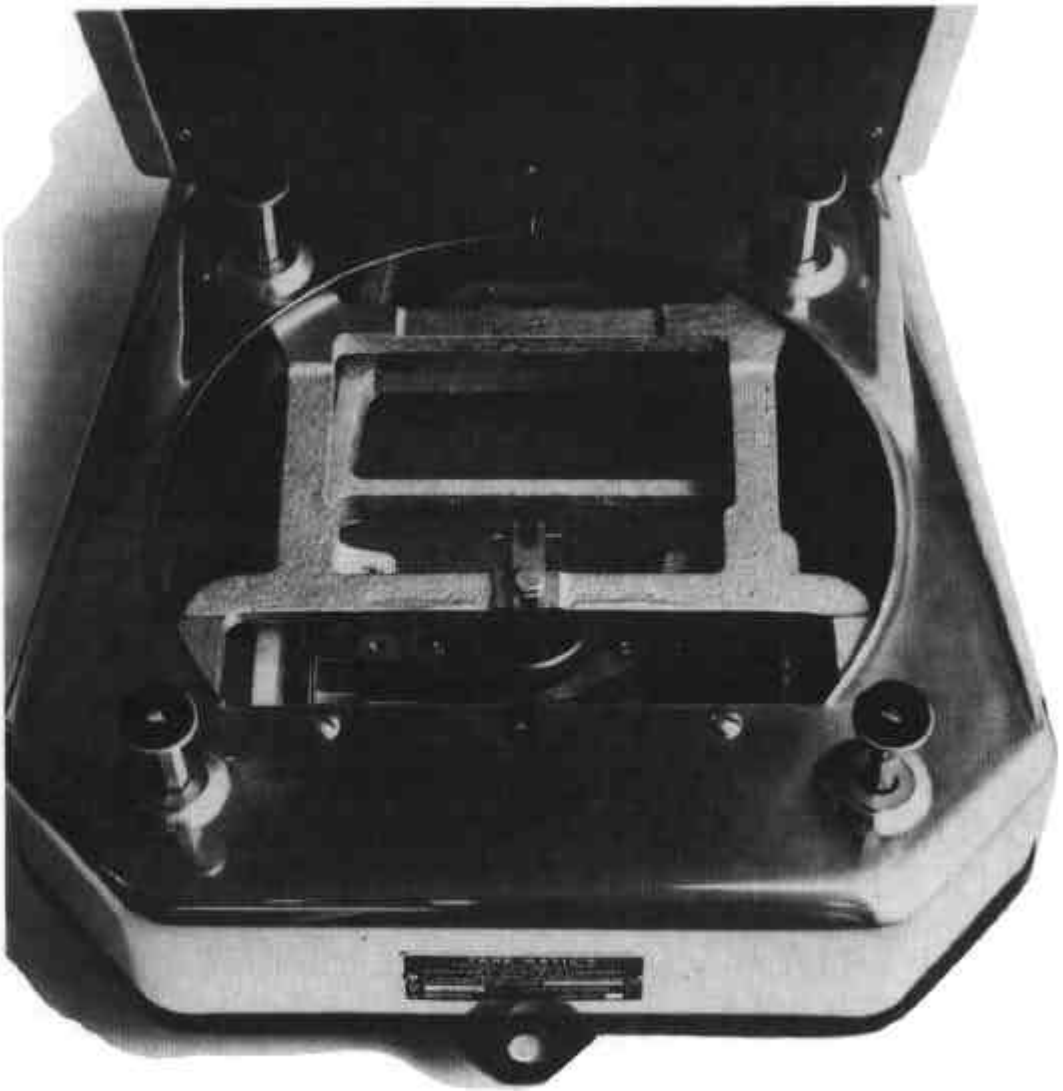
21/12/76

FIGURE 6/4D/53 - 4



Sanitary TR1 — Schematic Drawing

21/12/76



Sanitary TRI — Lever Mechanism

21/12/76

FIGURE 6/4D/53 - 6

\$	\$	
PRICE PER kg	TOTAL PRICE	NET WEIGHT-kg

(a) Before printing

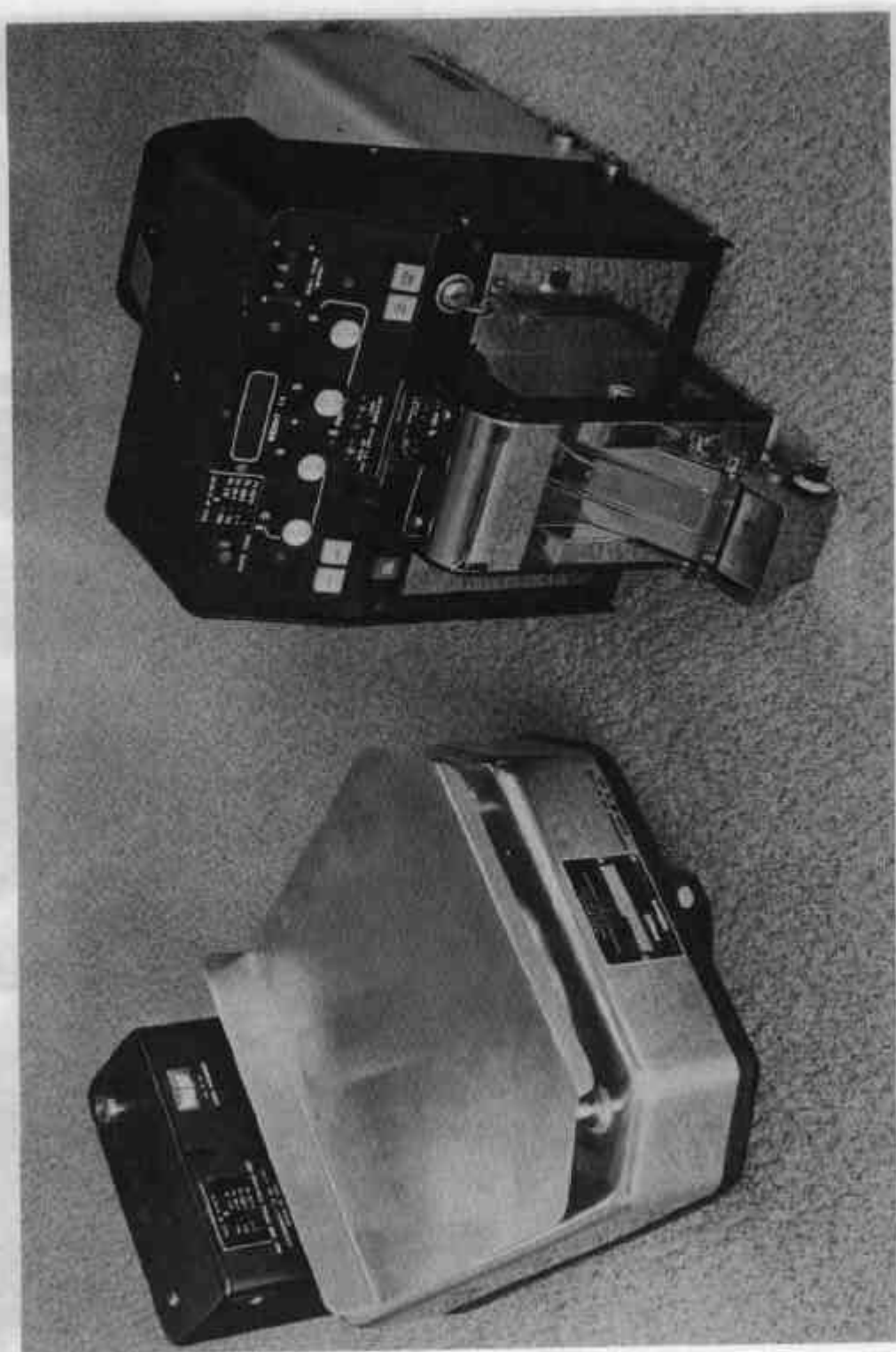
\$ 7.32	\$ 40.63	5-550
PRICE PER kg	TOTAL PRICE	NET WEIGHT-kg

(b) After printing

Sample Ticket (actual size)



FIGURE 6/AD/53-7



Sanitary Model TR2

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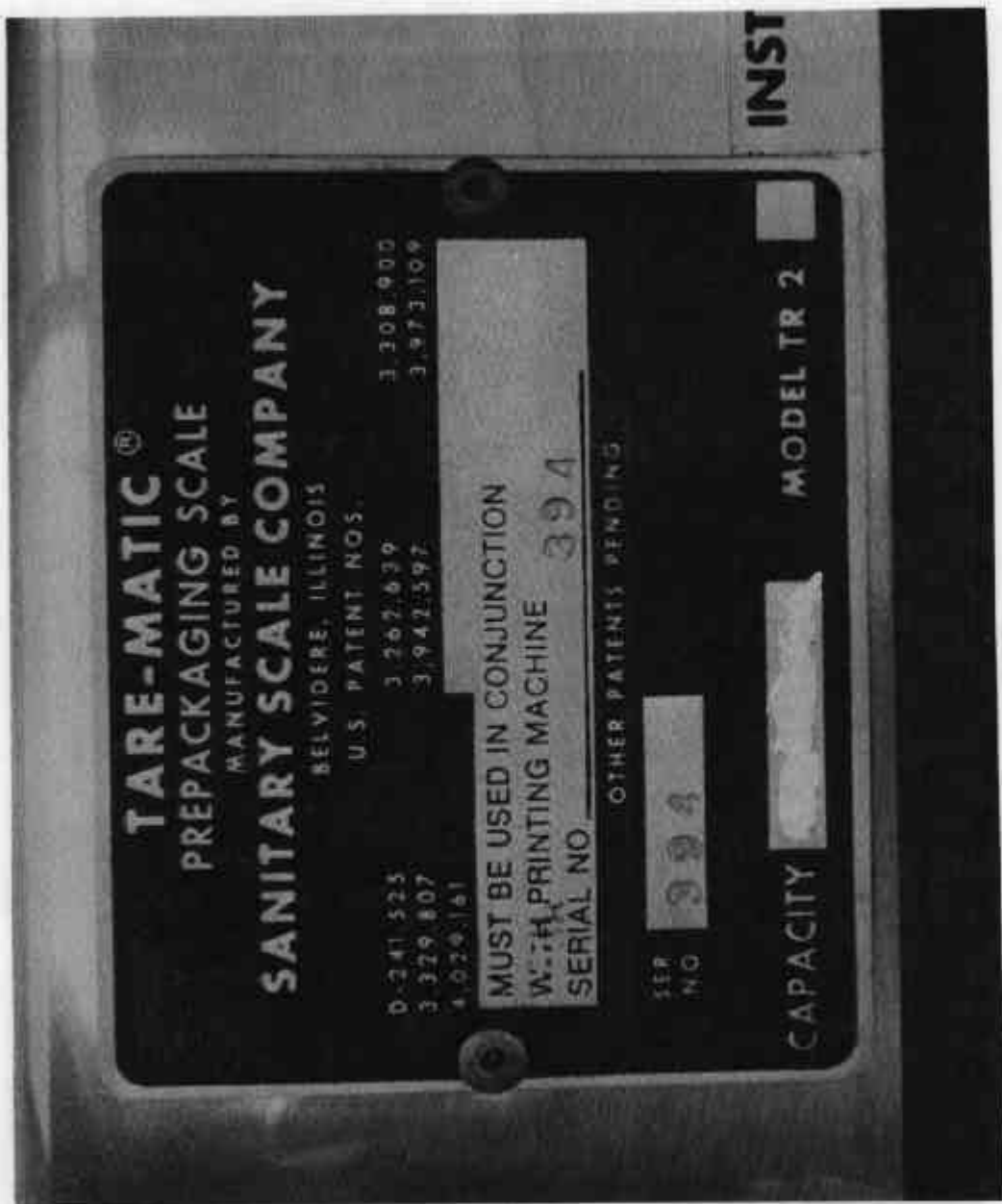
FIGURE 6/4D/53-8



Model TR2 Labelling Unit.

FIGURE 6/40/53-9

6/10/82



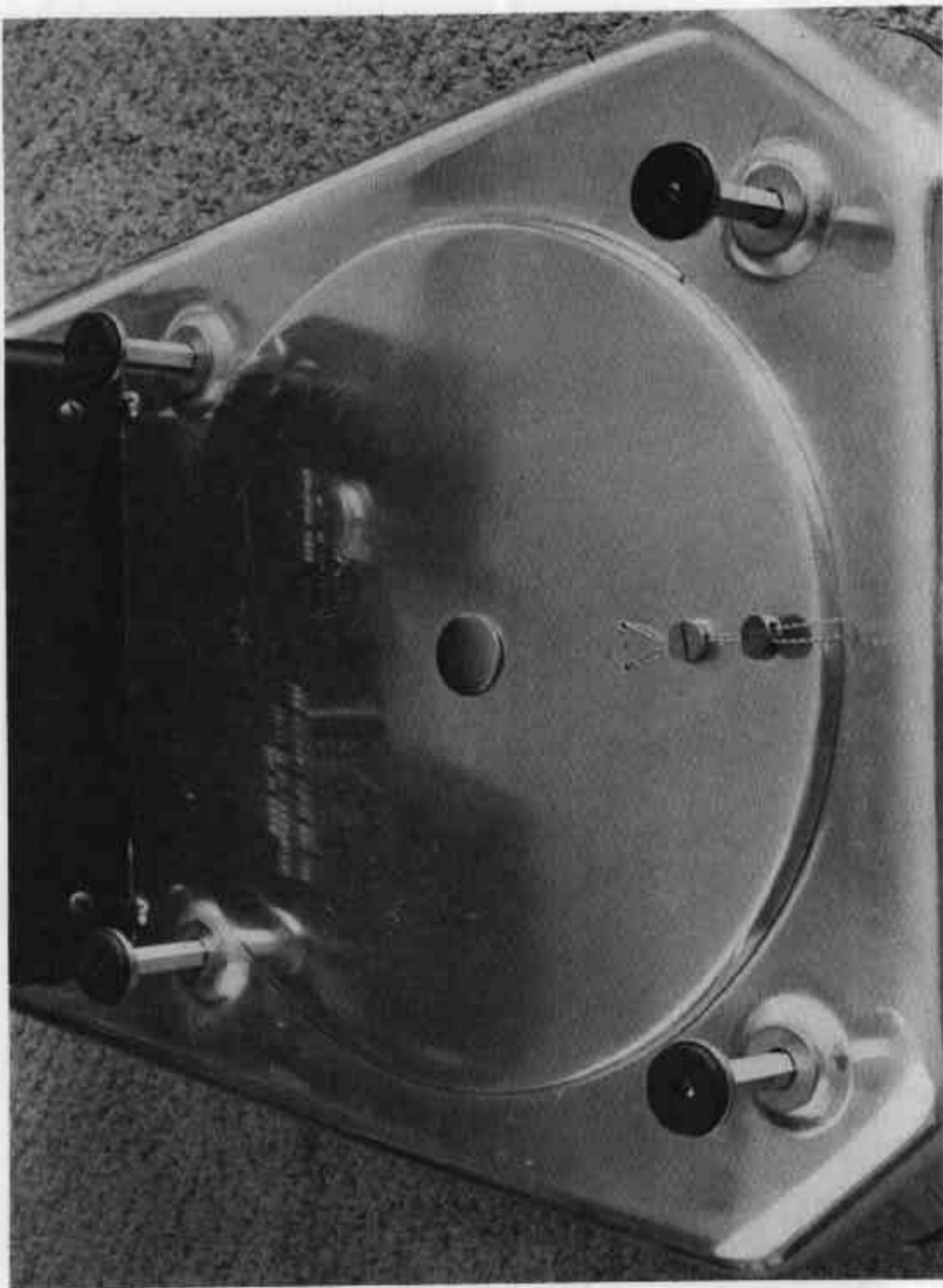
Weighing Unit - Additional Marking Plate

FIGURE 6/40/53-10



Labelling Unit - Additional Marking Plate

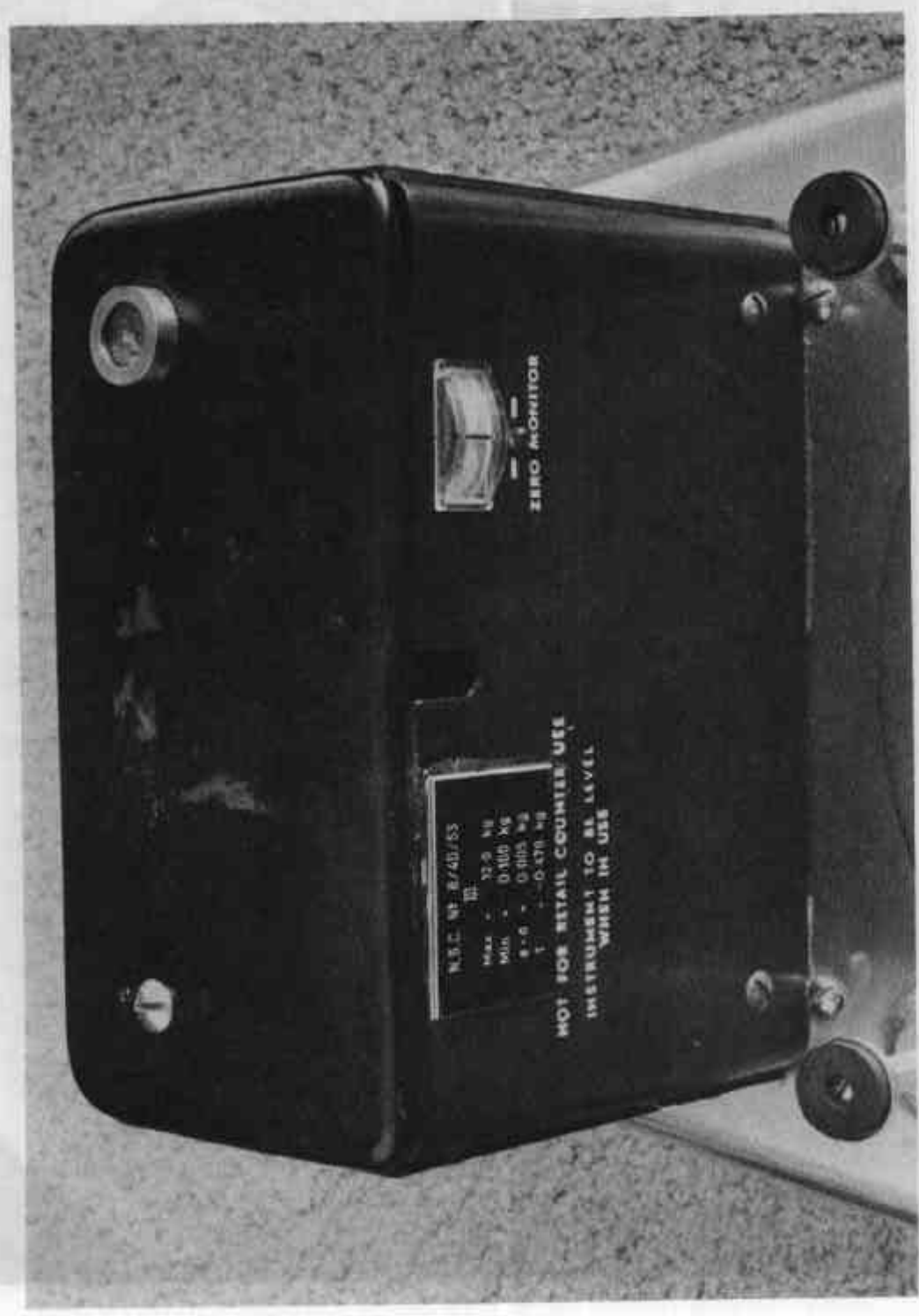
FIGURE 6/40/53-11



Sealing Of Weighcell Cover Plate

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FIGURE 6/40/53-12

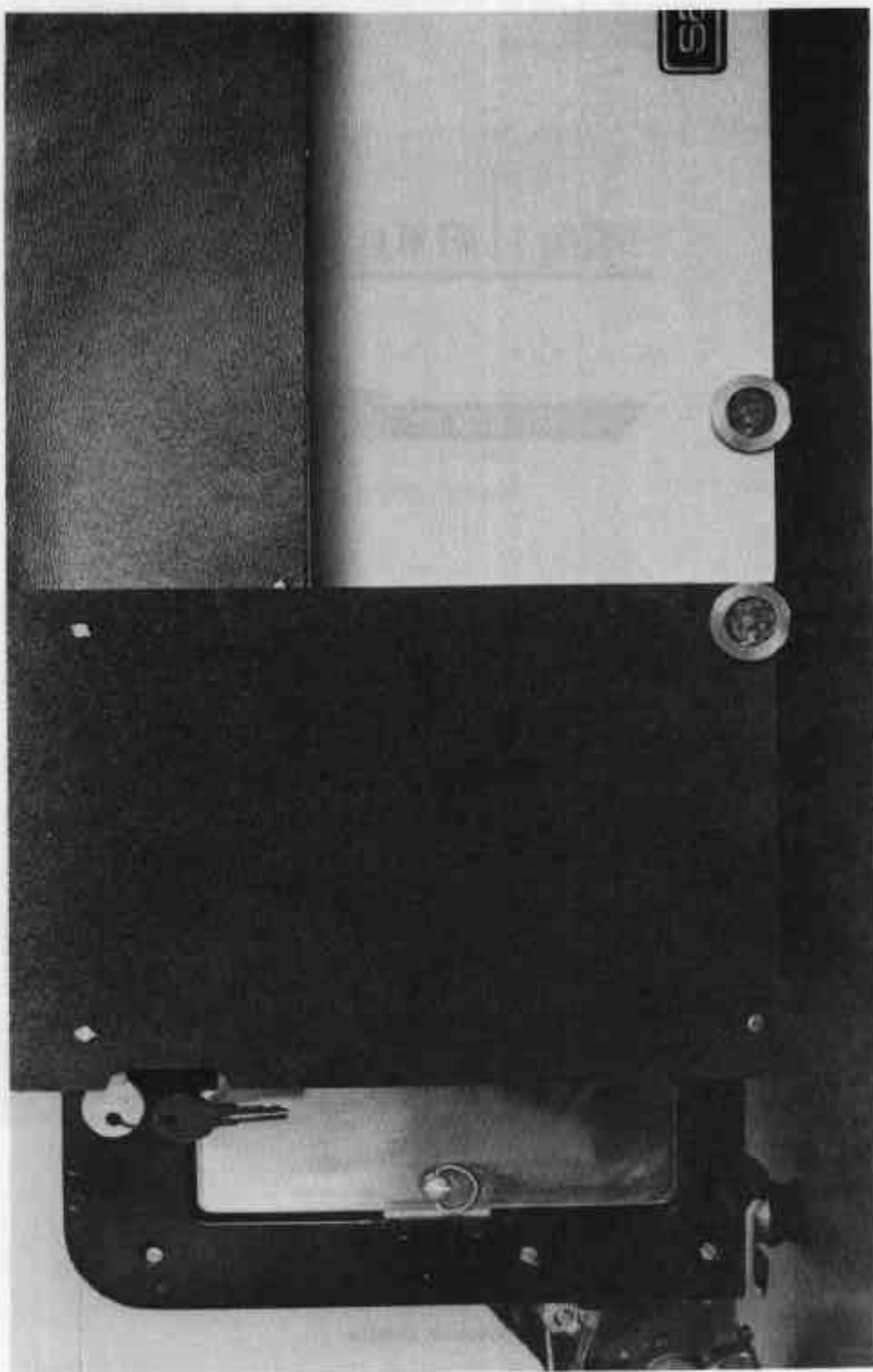


N.S.C. NO. 8/40/53  
III  
MAX. - 32.0 NII  
MIN. - 0.100 Kg  
R - 6 - 0.100 NII  
T - 0.470 NII

**NOT FOR RETAIL COUNTER USE**  
**INSTRUMENT TO BE LEVEL**  
**WASH IN USE**

Soiling of Weighing Unit Head

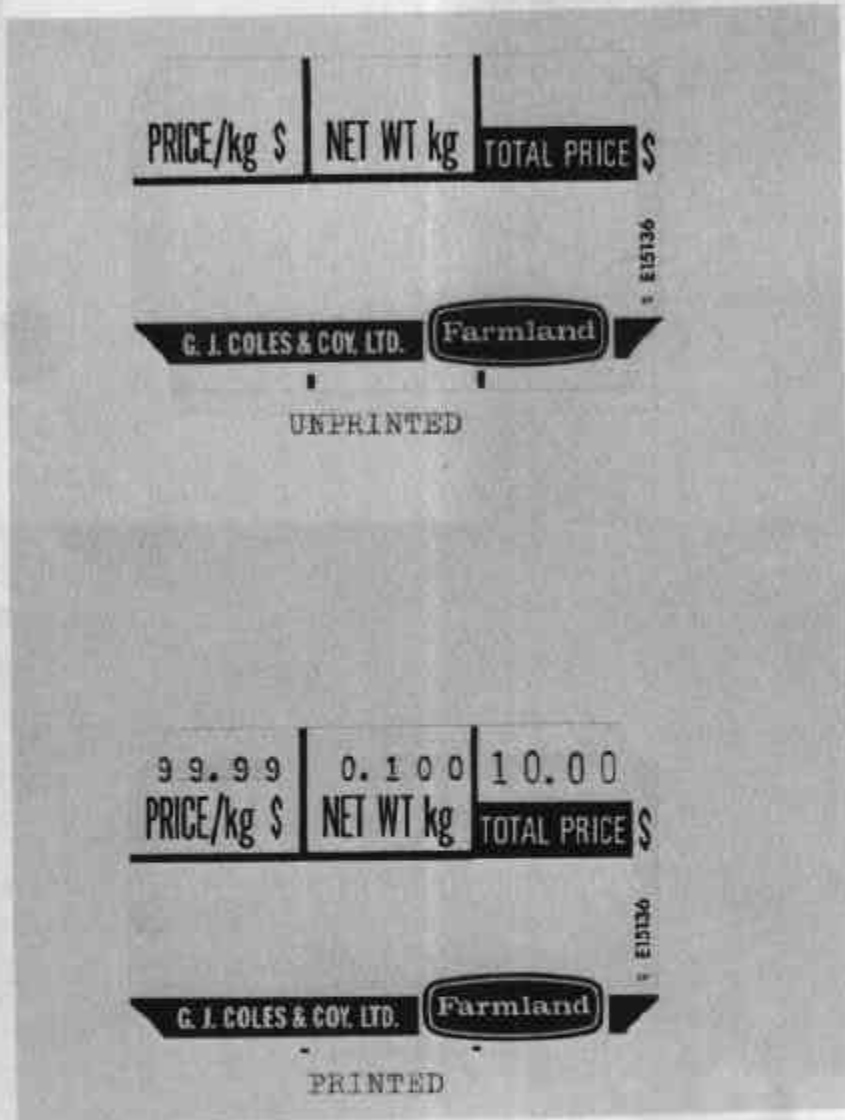
FIGURE 6/40/53-13



Sealing Of Labelling Unit

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FIGURE 6/40/53-14



Typical Labels