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CERTIFICATE OF APPROVAL No 6/4D/86 CANCELLED

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This is to certify that the patterns of the

Berkel Weighing Instrument Model ED Pac 5

submitted by Euroscale Pty Ltd,
19 Evans Street,
Burwood, Victoria, 3125,

have been approved under the Weights and Measures (Patterns of Instruments) Regulations as being suitable for use for trade.

Date of Approval: 17 November 1978

The patterns are described in Technical Schedule No 6/4D/86, and in drawings and specifications lodged with the Commission.

The approval is subject to review on or after 1 December 1983.

All instruments conforming to this approval shall be marked with the approval number "NSC No 6/4D/86".

Signed

Executive Officer

31/1/79

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/86

Pattern: Berkel Weighing Instrument Model ED Pac 5

Submittor: Euroscale Pty Ltd,
19 Evans Street,
Burwood, Victoria, 3125.

Date of Approval: 17 November 1978

All instruments conforming to this approval shall be marked "NSC No 6/4D/86".

Description:

The pattern is a self-indicating price-computing prepackaging weighing instrument of capacity 9,995 kg by 0,005 kg scale intervals with price computing in 1c increments to $99,99 per kg and price to $999,40 (see Figure 1). Mass, tare mass, unit price and price are digitally indicated on both sides of the instrument (see Figure 2). A sample label is illustrated in Figure 3.

The load receptor is supported by a vibrating-string load cell, which generates a change in frequency proportional to the weight applied. The signal from the load cell is converted in the computing section of the instrument to a mass value which is displayed on the mass indicator. The unit price is entered sequentially by means of a ten-button keyboard and is cleared automatically when the mass indicator returns to zero or when the C button is pressed. Pressing the fix-unit-price button F retains the unit price when the mass indicator returns to zero; this is indicated by the illumination of the word FIX.

An automatic zero-setting system is provided which monitors the mass information and resets zero within 0,25e whenever the instrument comes to rest within 0,5e of zero.

Additionally, the automatic zero-resetting device will reset zero when the instrument is switched on provided the instrument is within 20e of the factory-set reference point, and when a negative load change of not more than 20e occurs, for example, when a soiled load receptor is cleaned.

A self-initiating zero-check test program occurs every 0,4 s when the instrument is not loaded; if an error in zero setting is encountered an error signal is given and the instrument becomes inoperative until the fault is cleared.*

A semi-automatic subtractive taring device with a maximum effect up to the capacity of the instrument is provided. A container placed on the load receptor is tared to within 0,25e when the tare button T is pressed. The value of the tare is indicated to the nearest scale interval on tare-mass indicators on both sides of the instrument, and zero ± 0,25e is indicated on the main mass indicators. When the container is removed the mass indicator goes blank; the tare-mass indicator continues to display the tare value.

When the filled container is placed on the load receptor, the mai. mass indicator indicates a net mass. The tare value remains throughout the weighing. The tare is automatically cancelled when the net mass is printed and the filled container is removed from the load receptor.

The indication of mass and computed price blank out when the load is below zero or above capacity, or when the load is not steady.

At equilibrium a circuit within the computer electronically adjusts the discrimination of the instrument from less than 0,005 kg to 0,01 kg. This stabilises the mass indication, minimising the effect of vibration or wind loading, and prevents alternate indications of adjacent values if the load causes the instrument to be at a changeover point between scale intervals. A 0,01 kg change in the load, or selection of a different unit price, will override the discrimination circuit and cause the instrument to reassess the condition of equilibrium.

The instrument is marked adjacent to each mass indicator, for example:

(III)

Max	=	9,995 kg
Min	=	0,1 kg
$d_i = e$	=	0,005 kg
T	=	- 9,995 kg

and "not to be used in the presence of the purchaser".

* A separate zero-balance indicator is not provided as the automatic zero-setting system together with the self-initiating zero-check test program ensures that the indication of zero mass always means zero within 0,25e.

The load cell is retained in the instrument by a set screw located beneath a stamping-plug seal (see Figure 4). The cover of the instrument is retained by a set screw and sealed by a lead-and-wire seal (see Figure 5).

The weighing unit is fitted with an output socket; when the label printer is attached to this socket, the serial number of the label printer is sealed to the weighing unit by the stamping plug on the side of the weighing unit (Figure 4). When the label printer is not fitted, the output socket is covered by a plate which cannot be removed without breaking the seal of the weighing unit. A cover within the label printer prevents access to the printer-circuit boards; the cover is sealed by a lead-and-wire seal (see Figure 6).

Variant:

The approval includes:

The keyboard located above the mass, tare mass, unit-price and price indicators (see Figure 7).

Special Tests:

1. 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 Errors for Weighing Instruments with Digital Indication (Document 104), with, say, a load equivalent to 10 scale intervals on the load receptor. The indications with 0,25e and 0,75e additional weight placed on the load receptor should then be 10e and 11e respectively.

2. Discrimination — at equilibrium the discrimination is electronically adjusted to be not less than 0,01 kg. This setting may be checked in the following manner:

   With the load on the instrument adjusted so that the weight indicated is at a changeover point and with the higher of the two readings indicated, gently placing a load of 0,012 kg on the load receptor should cause the mass indicated to increase by not less than 0,01 kg.

   Note:

   Determination of changeover point: Selection of a new unit price overrides the discrimination circuit and causes the

instrument to reassess the condition of equilibrium. The changeover point may therefore be found by changing the unit price as the load is varied. This will cause the input from the load cell to be rechecked at each unit-price change. A changeover point will be indicated when at two different unit prices the same load indicates adjacent values, say, 1,09 kg and 1,095 kg.

An alternative to changing the unit price is to remove and replace, say, a 1 kg mass each time the load is varied. Again, changeover points will be indicated when the same load indicates adjacent values, say, 1,09 kg and 1,095 kg.

3. Level sensitivity — as the automatic-zero device prevents 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 to a slope of 1 in 20, the indication (10e) should not change by more than 2 scale intervals, and when the 10e load is removed and zero allowed to reset in the tilted position, the instrument should satisfy the weighing-accuracy specification, that is, ± 0,5 scale interval for the first 500 scale intervals, ± 1 scale interval over 500 and up to 2000 scale intervals.

4. Price-computing accuracy — the indications and printing of mass, unit price and total price as listed in Table 1 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, which may be carried out in conjunction with this test in accordance with the Commission's recommended testing procedure for the elimination of rounding errors — Document 104 — is necessary.

5. Range of indication — the maximum mass indicated should not exceed the maximum capacity; above this mass the indicator should be blank.

TABLE 1

1 Indicated and printed weight kg	2 $/kg $	3 Computed 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	30,57	30,57
2,000	70,03	140,06
3,000	84,67	254,01
4,000	92,00	368,00
5,000	95,00	475,00
6,000	97,00	582,00
7,000	99,00	693,00
8,000	99,50	796,00
9,000	99,99	899,91
9,995	99,99	999,40

Test Procedure — 9,995 kg by 0,005 kg Instrument with Unit Price to $99,99/kg and Price to $999,40

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/86

CHANGE No 1

The description of the

Berkel Weighing Instrument Model ED Pac 5

given in Technical Schedule No 6/4D/86 is altered by changing the description of the sealing of the label printer to the weighing unit.

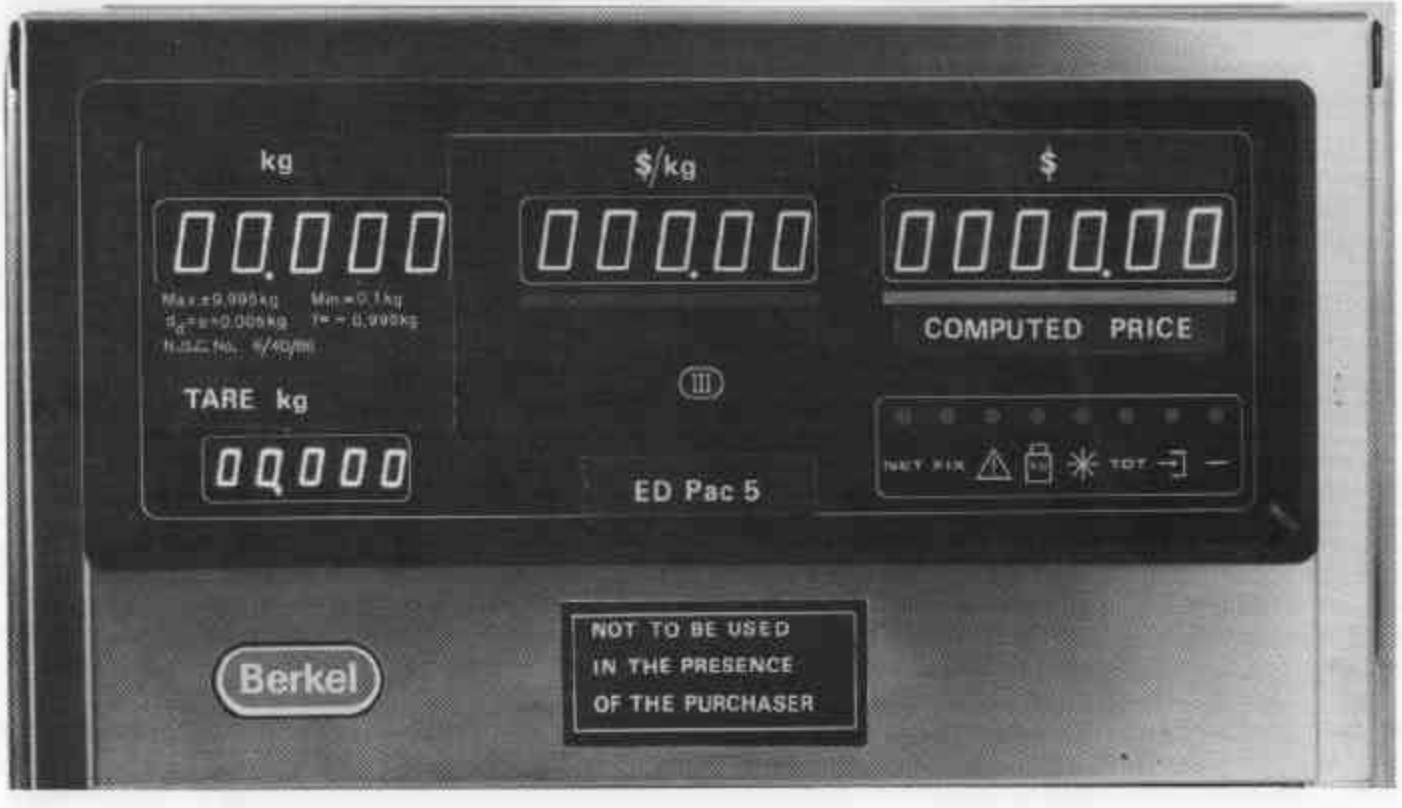
Replacement pages 3 and 4 and replacement Figures 6/4D/86 - 4 and 6 are attached. The altered text on page 3 is marked by a line in the margin.

1/6/79

FIGURE 6/4D/86 - 1

Berkel ED Pac 5

FIGURE 6/4D/86 - 2



Berkel ED Pac 5 — Mass, Unit-price and Price Reading Face

NET kg	PRICE/kg $	TOTAL PRICE $

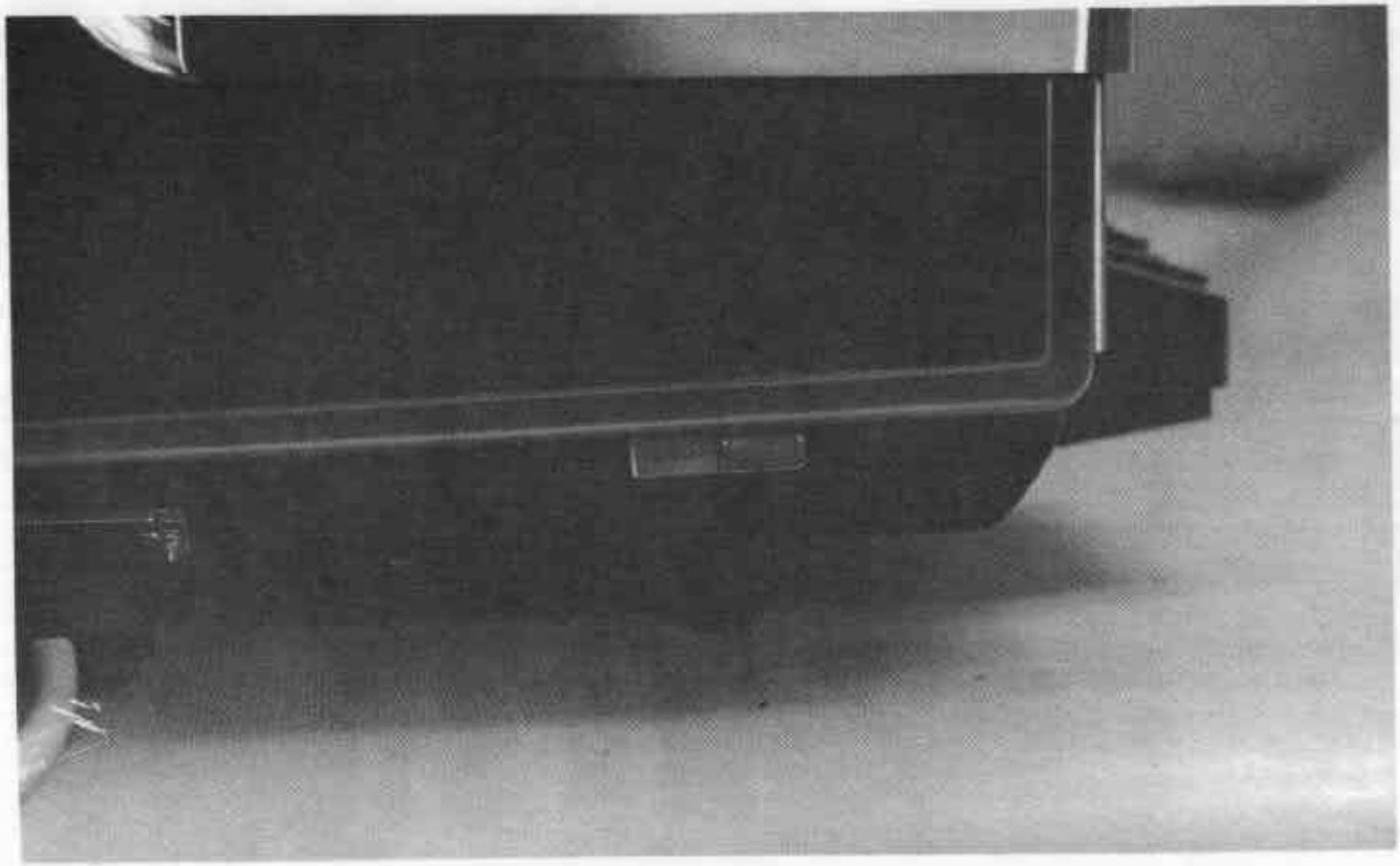
(a) Before printing

NET kg	PRICE/kg $	TOTAL PRICE $
00,505	004,99	002,52

(b) After printing

Sample Label (actual size)

FIGURE 6/4D/86 - 4



Berkel ED Pac 5 - Sealing of Load Cell and Serial No of Printer

FIGURE 6/4D/86 - 5

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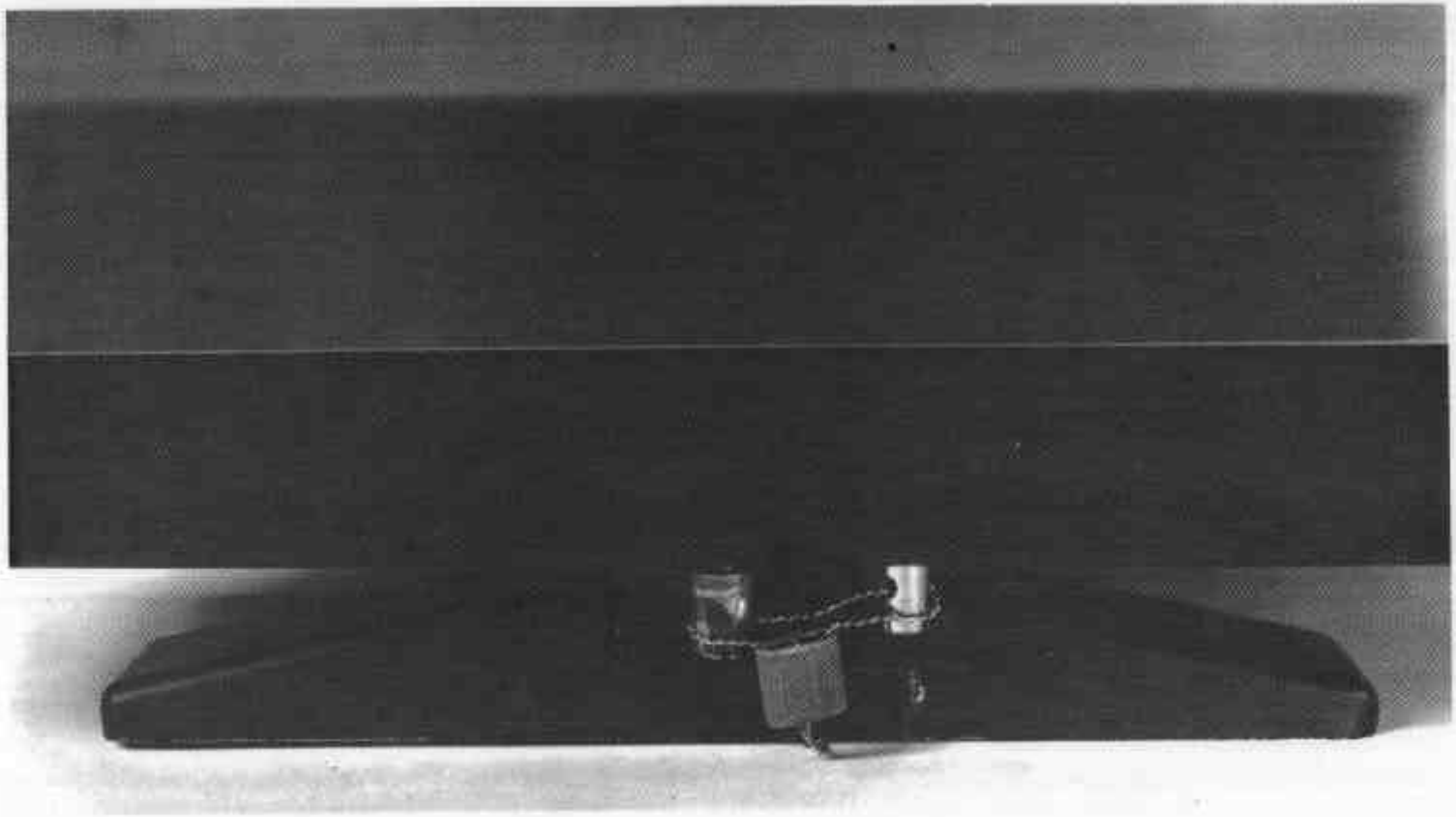
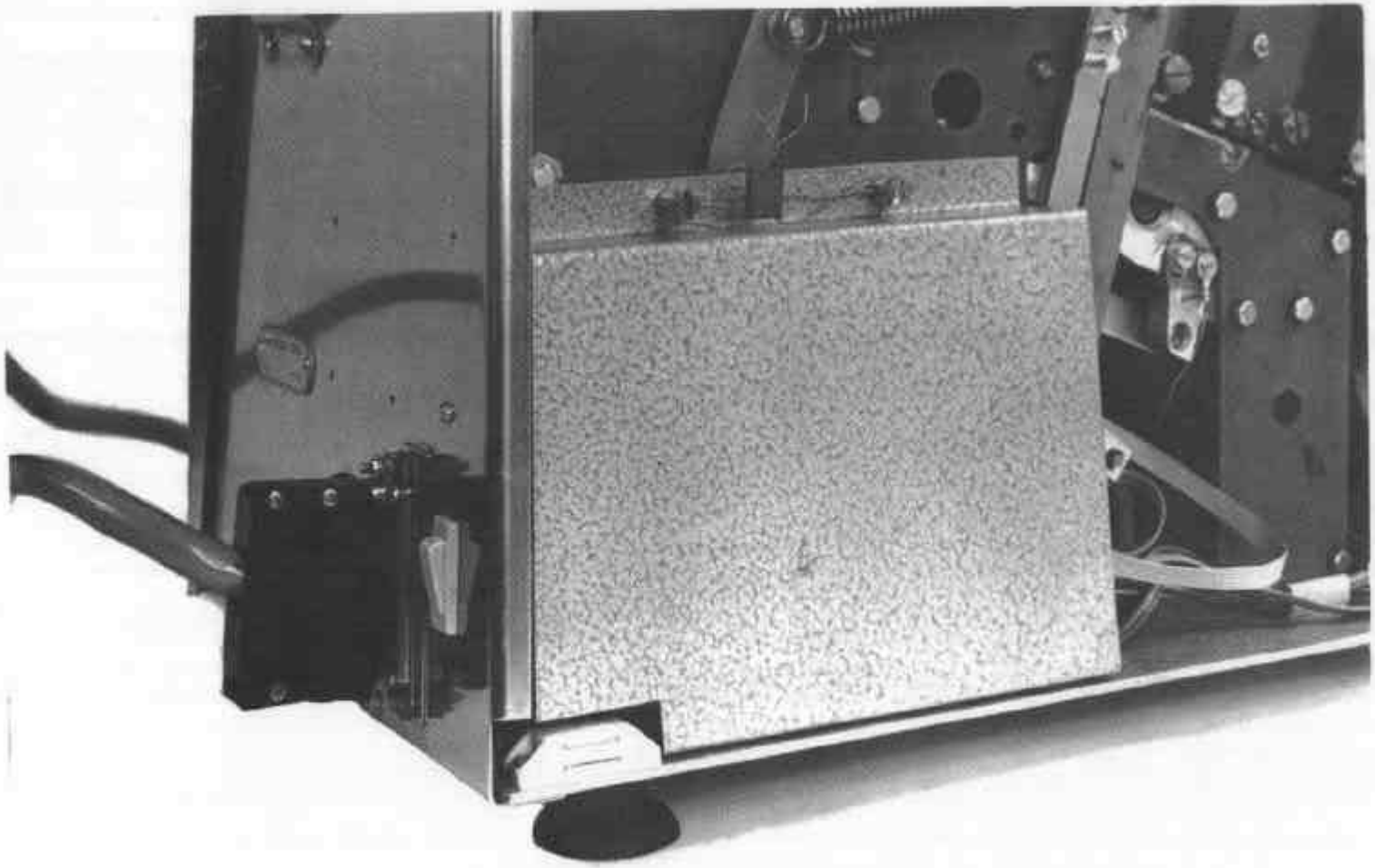


Berkel ED Pac 5 — Sealing of Instrument Cover

FIGURE 6/4D/86 - 6



Berkel ED Pac 5 — Sealing of Printer Circuit Boards

Berkel ED Pac 5 — with Keyboard Above Mass,
Unit-price and Price Indicators