



NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/4D/94

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

Electro Scale Weighing Instrument Model Pioneer 1010

submitted by Electroscale (Aust) Pty Ltd,
9 Lillian Street,
Pascoe Vale, Victoria, 3044,

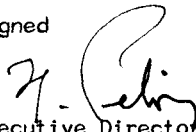
are suitable for use for trade.

The approval of the pattern and variants is subject to review on or after 30/9/84.

All instruments purporting to comply with this approval shall be marked NSC No 6/4D/94.

Relevant drawings and specifications are lodged with the Commission.

Signed


Executive Director

Descriptive Advice

Pattern: approved 28/9/79

- Electro Scale Model Pioneer 1010 self-indicating, price-computing weighing instrument of capacity 9,990 kg by 0.010 kg scale intervals.

Technical Schedule No 6/4D/94 dated 18/10/79 describes the pattern.

Variant: approved 17/8/81

- With modified housing, modified buttons and modified indicator panels.

Technical Schedule No 6/4D/94 Variation No 1 dated 18/8/81 describes variant 1.

Filing Advice

Certificate of Approval No 6/4D/94 dated 18/10/79 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Certificate of Approval No 6/4D/94 dated 18/8/81
Technical Schedule No 6/4D/94 Variation No 1 dated 18/8/81.

18/8/81
(replaced 9/10/81)



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/94

Pattern: Electro Scale Weighing Instrument Model Pioneer 1010

Submitter: Electro Scale (Aust.) Pty Ltd,
9 Lillian Street,
Pascoe Vale, Victoria, 3044.

Description of Pattern:

The pattern (Figures 1 and 2) is a self-indicating price-computing weighing instrument of 9,990 kg capacity by 10 g scale intervals, with a semi-automatic subtractive tare of 0,500 kg, price computing in 1 c increments to \$99,99 per kilogram, and total-price indication to \$998,90. Mass, tare mass, unit price and price are digitally indicated on both sides of an elevated headwork. Unit price is entered by pressing push buttons marked 0 to 9, and cleared either by pressing button C or automatically when the mass indicator returns to zero. Pressing the button marked S retains the unit price when the mass indicator returns to zero. Pressing a test button underneath the machine tests the seven bars of each digit. When power is turned on to the instrument, all indicators show 8, then blank and then zero.

The load receptor is supported by a spider which is attached to the Revere 14 kg strain-gauge load cell (Figure 3).

The output voltage from the load cell, which is proportional to the load applied, is digitally encoded to continuously indicate mass, and is multiplied by the unit price entered by the push-buttons to continuously indicate total price.

The instrument will rezero automatically whenever it comes to rest within 0,5e of zero; this is indicated by a zero light being illuminated when zero is set within 0,25e. A button marked Z is provided for rezeroing the instrument when zero has changed by one or more increments.

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

A container of mass up to 0,500 kg placed on the load receptor is

automatically tared to within $0,25e$ when the button marked T is pressed. The value of the tare is indicated to the nearest scale interval on both sides of the instrument and the mass indicator displays zero. When the container is removed the mass indicator goes blank; the tare value remains displayed.

When the filled container is placed on the load receptor, net mass is indicated and the tare value is still displayed. The tare can only be cancelled by again pressing the T button.

The instrument is provided with a level indicator and four adjustable feet. Adjacent to the level indicator is a notice advising that the instrument must be level when in use. A stamping plug is provided on the vendor's side of the instrument over a cover-retaining screw (Figure 1).

The nameplate is marked with the following data:

Manufacturer's name	
Serial number of instrument	
NSC approval number in the form:	NSC No 6/4D/94
Accuracy class in the form:	III
Maximum capacity in the form:	Max 9,990 kg *
Minimum capacity in the form:	Min 0,2 kg *
Verification scale interval in the form:	$d_d = e = 0,01 \text{ kg}^*$
Maximum subtraction tare:	$T^d = - 500 \text{ g}^*$

* These markings are repeated adjacent to each mass indicator.

Test Procedures:

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 $2000e$.

As the instrument is fitted with automatic zero correction, the application of cumulative loads should not exceed 5 minutes' duration. Periodic removal of the load will allow the instrument to rezero and thus more closely simulate actual usage.

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 Error for Weighing Instruments with Digital Indication (Document 104) with, say, a load equal to 10e on the load receptor. The indication with 0,25e and 0,75e additional weight on the load receptor will then be 10e and 11e respectively.

2. 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, 0,25 kg to the instrument and press the Z button; the instrument should not rezero; and
 - (b) reduce the load to, say, 0,15 kg and again press the Z button; the instrument should indicate zero balance.
3. 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 the 10e load is removed and zero allowed to automatically reset, or is manually reset, in the tilted position, the instrument should satisfy the accuracy requirements given above.

4. Price-computing accuracy — the indications 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. Taring — at any load within the capacity of the tare mechanism, the tare mechanism in conjunction with the automatic zero device should be able to reset the mass indicator to zero within 0,25e.

This may be checked as described for the zero test.

6. Range of indication

- (a) The maximum mass indicated should not exceed the maximum capacity (Max); above this indicated mass the indicator should be blank.
- (b) The minimum mass indicated should be zero; below this indicated mass the indicator should be blank.

7. Motion-detection test — apply a load, say, 5 kg, to the platter. The instrument should indicate 5,00 kg. Vibrate the platter by resting a hand on it and remove the 5 kg weight. The indicator should go blank after not more than half a second.

While still maintaining the vibration of the platter, place a different load on the receptor. The indicator should remain blank until the vibration is removed.

TABLE 1

Indicated mass	Price per kg	Price
kg	\$	\$
0,000	00,00	00,00
0,200	99,99	20,00
0,210	98,98	20,79
0,220	97,97	21,55
0,330	96,96	32,00
0,340	95,95	32,62
0,450	94,94	42,72
0,460	83,83	38,56
0,570	72,72	41,45
0,580	61,61	35,73
0,690	50,51	34,85
0,650	49,49	32,17
0,700	39,39	27,57
0,750	29,29	21,97
0,800	19,19	15,35
0,850	09,09	07,73
0,900	55,16	49,64
1,100	53,31	58,64
2,000	58,99	117,98
3,000	70,99	212,97
4,000	75,99	303,96
5,000	80,99	404,95
6,000	94,38	566,28
7,000	96,99	678,93
8,000	97,99	783,92
9,000	98,99	890,91
9,990	99,99	998,90

Test Procedure — 9,990 kg Instrument by 0,01 kg Scale Intervals
with Unit Price to \$99,99 and Price to \$998,90



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/94

VARIATION No 1

Pattern: Electro Scale Weighing Instrument Model Pioneer 1010

Submittor: Electroscale (Aust) Pty Ltd,
9 Lillian Street,
Pascoe Vale, Victoria, 3044.

1. Description of Variant

1.1 Variant 1

1.1.1 General

With modified housing, push button and indicator panels (Figures 4, 5 and 6).

The push buttons are marked as follows:

Zero button is marked L
Tare button is marked SHIFT
Fixed unit price button is marked F.

1.1.2 Sealing

- (a) Lead-and-wire sealing is provided under the platter on diagonally opposite corners of the housing or by a similar method.
- (b) A stamping-plug is fitted on the vendor's side of the instrument.



NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4D/94

CHANGE No 1

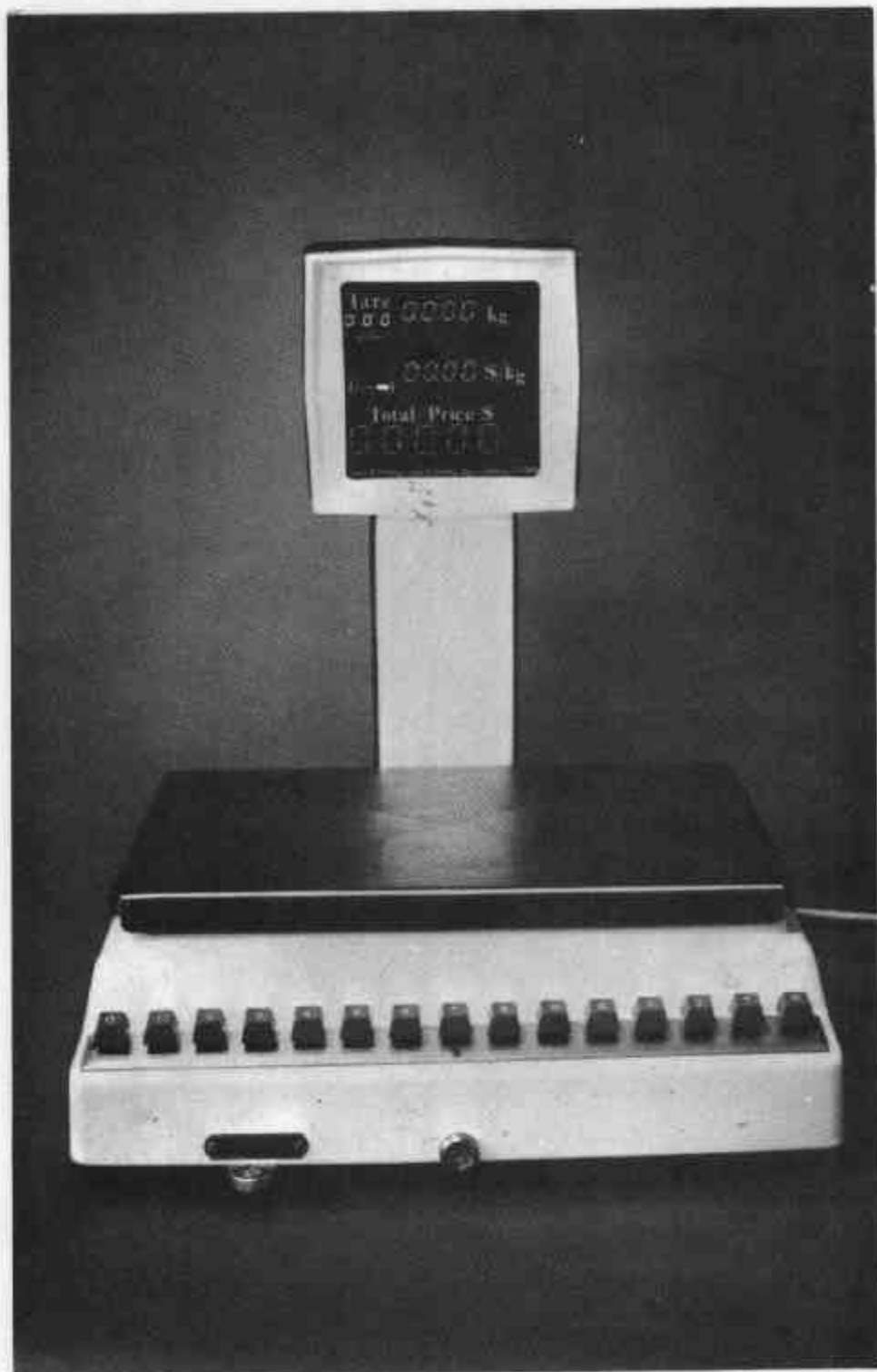
The following change is made to the description of the
Electro Scale Weighing Instrument Model Pioneer 1010
given in Certificate of Approval No 6/4D/94 dated 18/8/81:

The Certificate is replaced by the attached Certificate, in which the
paragraph entitled "Filing Advice" has been added.

Signed

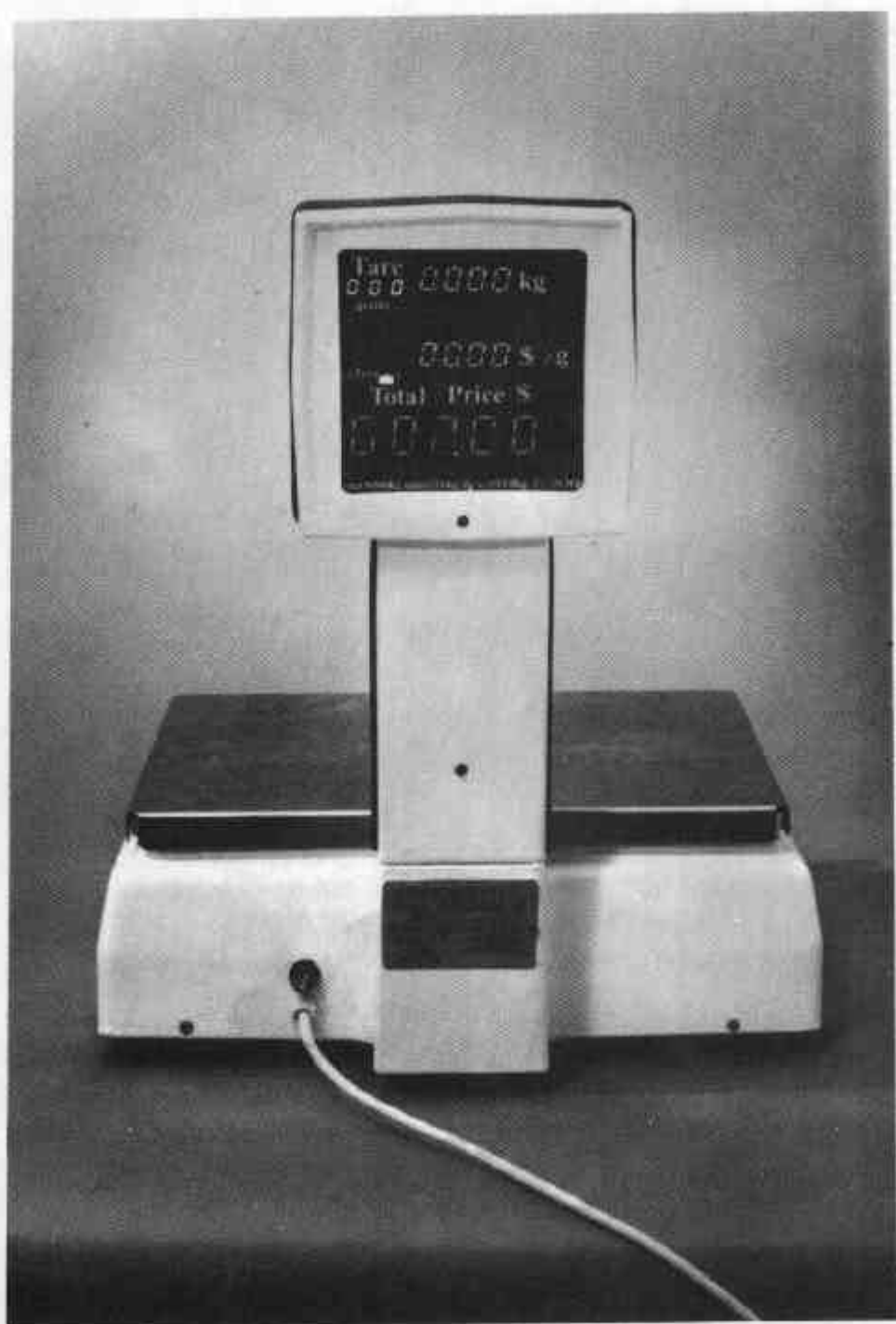
Executive Director

FIGURE 6/4D/94 - 1



Pioneer Model 1010 — Vendor's Side

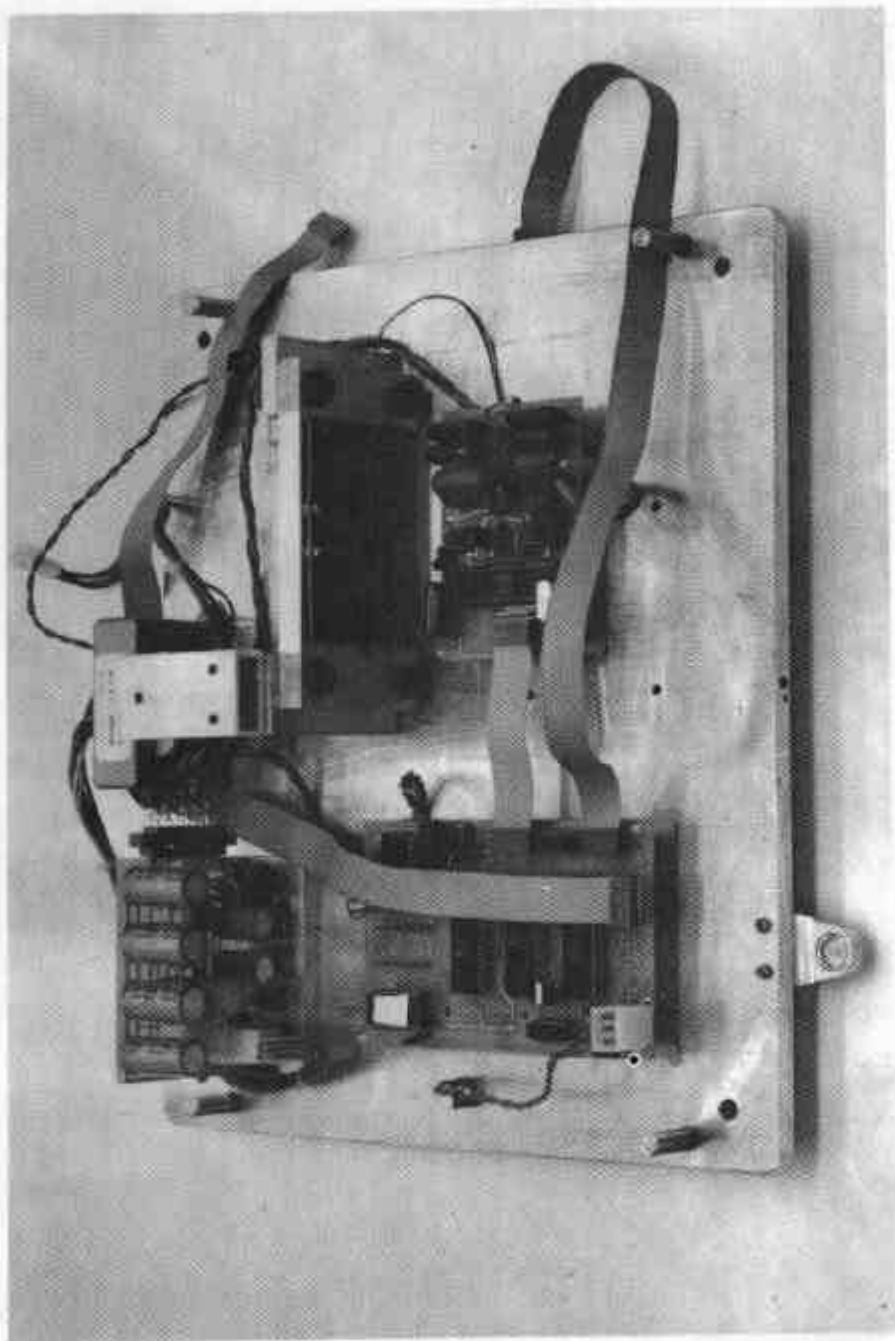
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Pioneer Model 1010 — Purchaser's Side

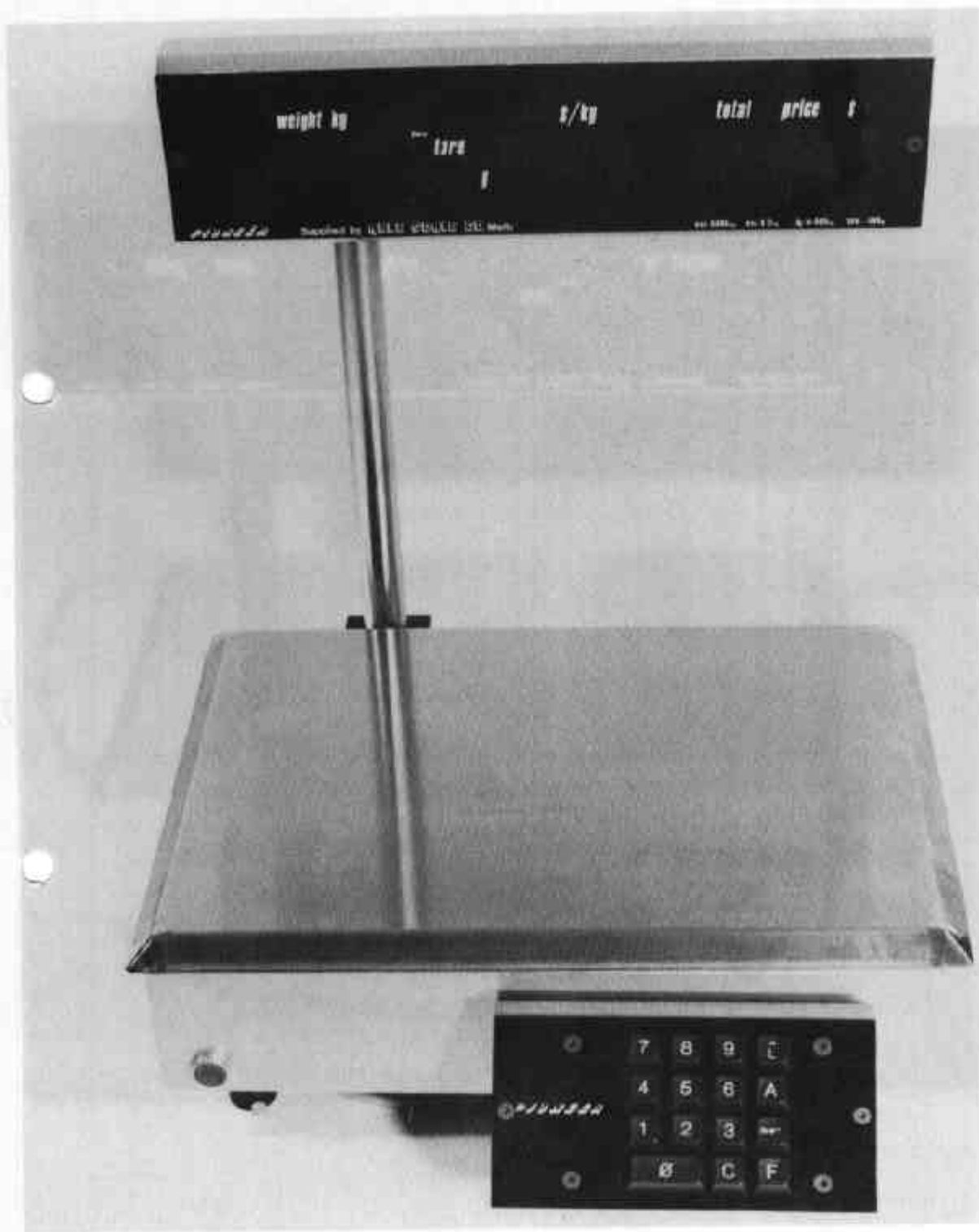
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FIGURE 6/4D/94 - 3

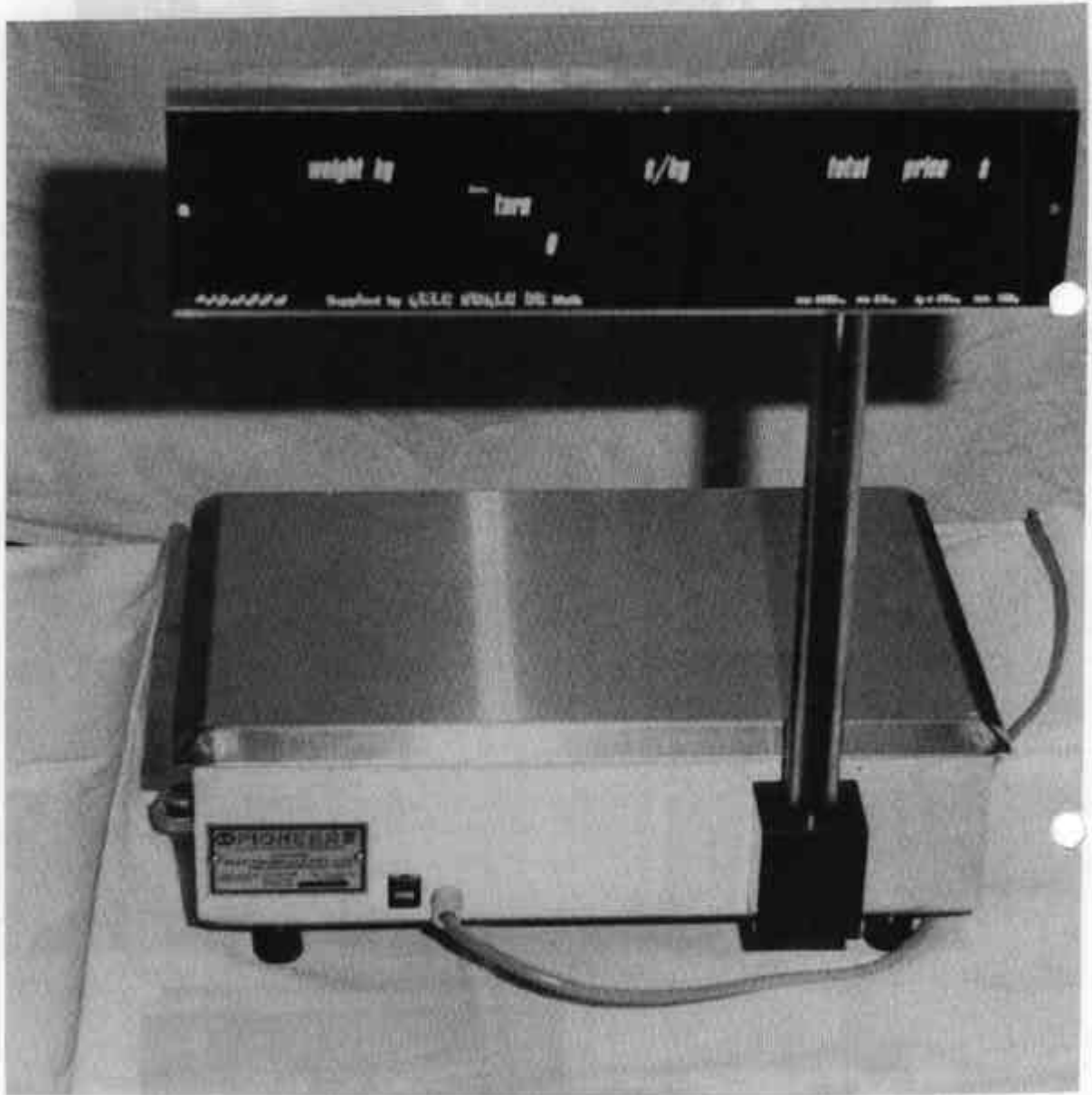


Pioneer Model 1010 with Covers Removed

18/10/79

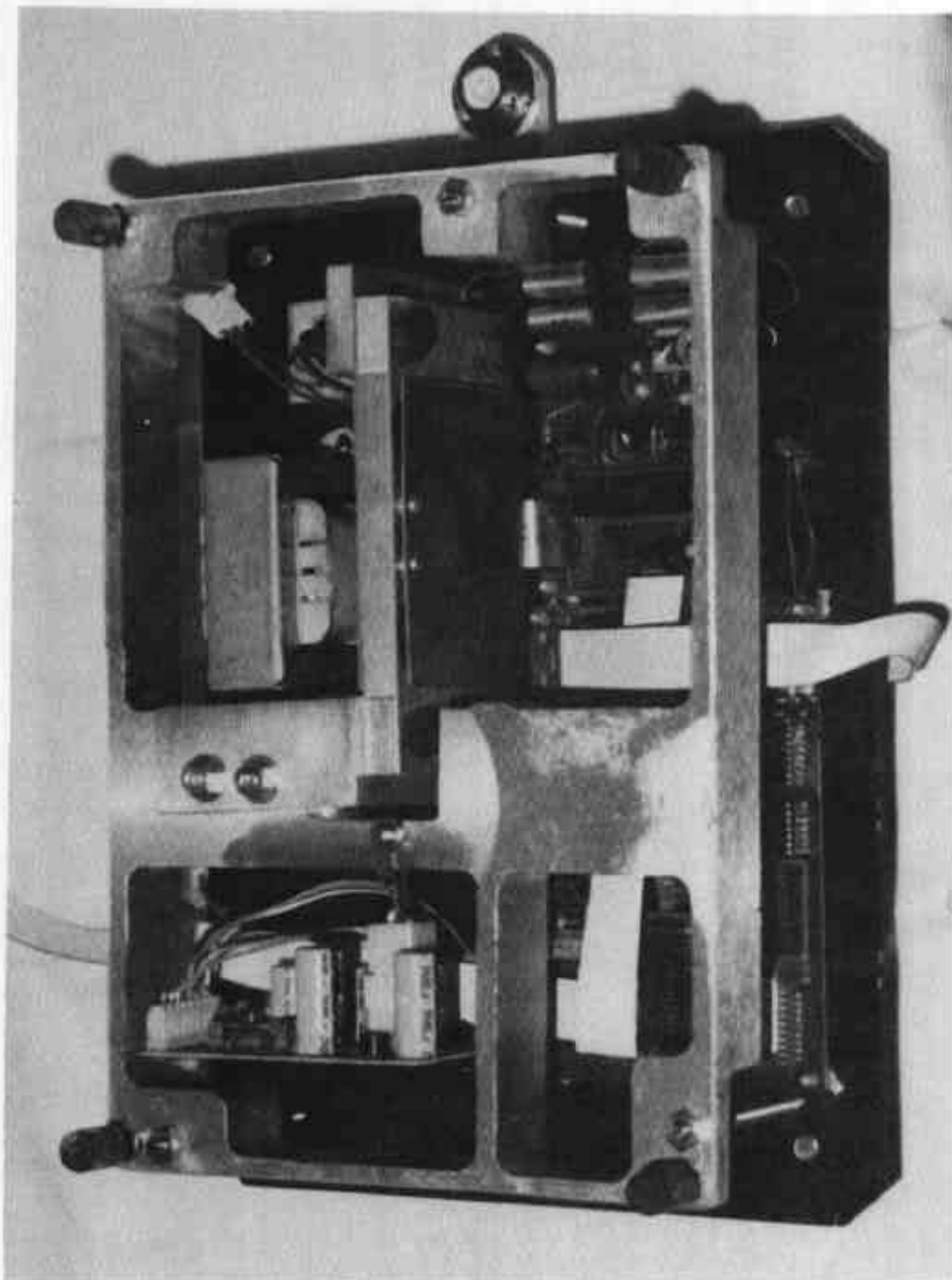


Variant 1, Vendor's Side



Variant 1, Purchaser's Side

FIGURE 6/40/94 - 6



Variant 1 with Cover Removed