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NATIONAL STANDARDS COMMISSION
WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

INSTRUMENT CERTIFICATE OF APPROVAL No 6/10B/39

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

Philips Model PR 1562/6222 Weighing Instrument

submitted by Rite-weigh Scale Service Pty Ltd
9 Wetherill Street
Lidcombe, New South Wales, 2141

are suitable for use for trade.

The approval is subject to review on or after 1/12/88.

The instrument purporting to comply with this approval shall be marked NSC No 6/10B/39.

The approval may be withdrawn if the instrument is used other than as described in the drawings and specifications lodged with the Commission.

Condition of Approval

The approval is limited to one instrument located at Metalex Pty Ltd, Edward Street, Huntingdale, Victoria, consisting of a single basework.

Signed


Executive Director

Descriptive Advice

Pattern: approved 28/10/83 - (provisionally approved 26/8/80)

- . A model PR 1562/6222 self-indicating weighbridge of 60 t maximum capacity and approved for use with 1200 scale intervals.

Variants: approved 28/10/83 - (provisionally approved 26/8/80)

1. With a model PR 1561 indicator replacing the model PR 1562.
2. With other Commission-approved digital indicators.

Technical Schedule No 6/10B/39 dated 8/9/80 describes similar instruments to the pattern and variants specified in this Certificate.

Filing Advice

Provisional Certificate No P6/10B/39 dated 8/9/80 is superseded by this Certificate and may be destroyed. Technical Schedule No P6/10B/39 and Figures 1 to 6 dated 8/9/80 should all be re-numbered 6/10B/39. The documentation for this approval, covering one instrument only, now comprises:

Certificate of Approval No 6/10B/39 dated 21/11/83
Technical Schedule No 6/10B/39 dated 8/9/80 (including Test Procedure and Table 1)
Figures 1 to 6 dated 8/9/80.

21/11/83



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No P6/10B/39

Pattern: Philips Weighing Instrument Model PR 1562/6222

Submitter: Rite-weigh Scale Service Pty Ltd,
9 Wetherill Street,
Lidcombe, New South Wales, 2141.

1. Description of Pattern

The pattern is a Philips self-indicating weighing instrument of 60 t maximum capacity, comprising a load receptor, load cells, junction box and a mass indicator displaying up to 3000 increments (Figures 1 to 3).

The basework comprises a load receptor supported on four pendulum-support mechanisms. Each pendulum-support mechanism comprises a Philips 6222 compression load cell with spherical ends which apply the load to spherical caps (Figures 3 and 4). The four load cells make up the resistant mechanism. Each load cell is rated to 20 tonnes; at maximum capacity of the instrument the force applied to each load cell is between 80 kN and 196 kN.

The pendulum-support mechanisms are self-centering devices allowing the load receptor to move freely in all horizontal directions and return automatically to the central position when the horizontal force is removed. Horizontal movement of the load receptor is limited by the load receptor surrounds, or by check links.

The cable from each of the load cells terminates in a sealed load-cell junction and balance box (Figure 2).

The mass-indicator unit, Philips PR 1562, displays up to 3000 increments (Figure 1). This unit is a combined mass indicator and basework-selector unit, allowing the output of the load cells of up to three load receptors to be individually displayed on the mass indicator. Each load receptor has the same maximum capacity, and is selected by one of three push-buttons on the front of the mass-indicator unit.

A separate calibration circuit and zero adjustment is provided for each load receptor selected. Three zero devices are provided.

The mass-indicator unit converts the mass information from the selected load cells into a digital indication of mass by counting, over a preset period, the number of pulses from an oscillator whose frequency of oscillation is proportional to the load on the load cells. The counting is repeated continuously, and while the counts in successive periods differ, that is, the instrument is not in equilibrium, the indicator illumination is at half brightness. Upon the instrument reaching a steady state, detected as equal counts in successive periods, the indicator is illuminated at full brightness.

Zero balance is set for the load receptor selected by the appropriate zero-adjustment knob on the front of the mass-indicator unit; a light adjacent to the word ZERO illuminates when zero is set within 0,25e.

A push-button marked TARE allows automatic taring of the load on the load receptor selected, to within 0,25e. On removal of the load the value of the tare to the nearest whole graduation is indicated on the mass indicator prefixed by a minus sign. The tare is subtractive and of maximum effect equal to the capacity of the instrument. When a tare is selected the push-button marked TARE will illuminate.

A negative gross mass is indicated by a flashing numerical indication prefixed by a flashing minus sign.

An output socket on the mass-indicator unit may provide data to peripheral devices which are not a part of the measurement instrument. These devices which may only be provided with the authorisation of the verifying authority of the State or Territory, may, for example, store and process the data, etc.

The load-cell connectors and the output sockets are located beneath a sealed cover on the rear of the mass indicator unit (Figure 5). The cover of the mass-indicator unit is only removeable after the sealed rear cover is removed. The serial numbers of each basework, and of the load cells of each basework, are identified by a tag or tags sealed to the instrument by the seal securing the rear cover (Figure 5).

*The measuring instrument examined and approved by the Commission is limited to the devices which determine the value of a physical quantity, control the measurement, and indicate the result of the measurement on a visual display, for example, a nixie-tube indicator or a seven-segment indicator.

1.1 Markings

The instrument's nameplate is marked with the following data:

Manufacturer's name:
 Serial number:
 NSC approval number in the form: NSC No P6/10B/39
 Accuracy class in the form: (III)
 Platform: A B C
 Maximum capacity in the form: Max ..., Max ..., Max...[#]
 Minimum capacity in the form: Min .., Min .., Min ..[#]
 Verification interval in the form: d_d=e..., d_d=e..., d_d=e...[#]
 Maximum tare capacity in the form: T_d=-...., T_e=-...., T_d=-....

2. Description of Variants

1. The Philips PR 1562 mass-indicator unit with a combined mass indicator, a basework-selector, and a summing facility, allowing the output of the load cells of two load receptors to be displayed either individually or in summation on the mass indicator. Each load receptor, and the summation of the two load receptors, has the same maximum capacity. Each load receptor, or the summation, is selected by one three push-buttons on the front of the mass-indicator unit.

Marking:

Manufacturer's name:
 Serial number:
 NSC approval number in the form: NSC No P6/10B/39
 Accuracy class in the form: (III)
 Platform: A B A + B
 Maximum capacity in the form: Max ..., Max ..., Max ..[#]
 Minimum capacity in the form: Min .., Min .., Min ..[#]
 Verification interval in the form: d_d=e..., d_d=e..., d_d=e...[#]
 Maximum tare capacity in the form: T_d=-...., T_d=-...., T_d=-....

2. A Philips PR 1561 mass-indicator unit which is similar to the PR 1562 mass-indicator unit but without the base-work selector, thus restricting its use to only one basework (Figure 6).

[#] These markings are repeated on the reading face of the instrument.

Marking:

Maximum capacity in the form: Max^g
 Minimum capacity in the form: Min^g
 Verification interval in the form: $d = e \dots$ ^g
 Maximum tare capacity in the form: $T = \dots$ ^g

(Other markings as for pattern)

3. Test Procedure1. Accuracy Requirements

The maximum permissible errors are:

+0,5e for loads between zero and 500e inclusive;
 +1e for loads above 500e and up to 2000e; and
 +1,5e for loads above 2000e.

2. Zero balance - illumination of the zero light indicates that zero is set within 0,25e; this may be checked in accordance with the Commission's digital zero test (Design Manual No 1, Document 104, Testing Procedures for the Elimination of Rounding Error for Weighing Instruments with Digital Indication).
3. Zero range - the maximum range of operation of the zero device should not exceed 4% of the capacity of the instrument (~2% approximately).
4. Load cell creep - leaving a maximum-capacity load on the load receptor for a period of 30 minutes should not cause the mass indicated to be incorrect, and on removal of the load the mass indicated should be zero.
5. Test loads - the application of the test loads specified in Table 1 and the display of these loads within the applicable tolerance is one method of checking that the instrument operates in accordance with the approved design.
6. Range of indication - the maximum mass indication should not exceed the maximum capacity (max); above this indicated mass the indicator should be blank.

These markings are repeated on the reading face of the instrument.

TABLE 1

Test Load in Scale Intervals*

50	1233,5
99	1422,5
188	1611,5
377	1800,5
566,5	2000,5
755,5	2500
944,5	3000

*Test Load: Number of scale intervals x scale interval.

Note: The test load should include a test at capacity, less the tolerance and less 0,5 scale interval.



NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No P6/10B/39

CHANGE No 1

The following change is made to the description of the
Philips Weighing Instrument Model PR 1562/6222
given in Technical Schedule No P6/10B/39 dated 3/9/80:

In the second paragraph of Description of Pattern -

- (a) 1st and 2nd lines: alter four pendulum support mechanisms to read six pendulum support mechanisms; and
- (b) 4th line: alter four load cells to read six load cells.

Signed

Executive Director

2/10/81

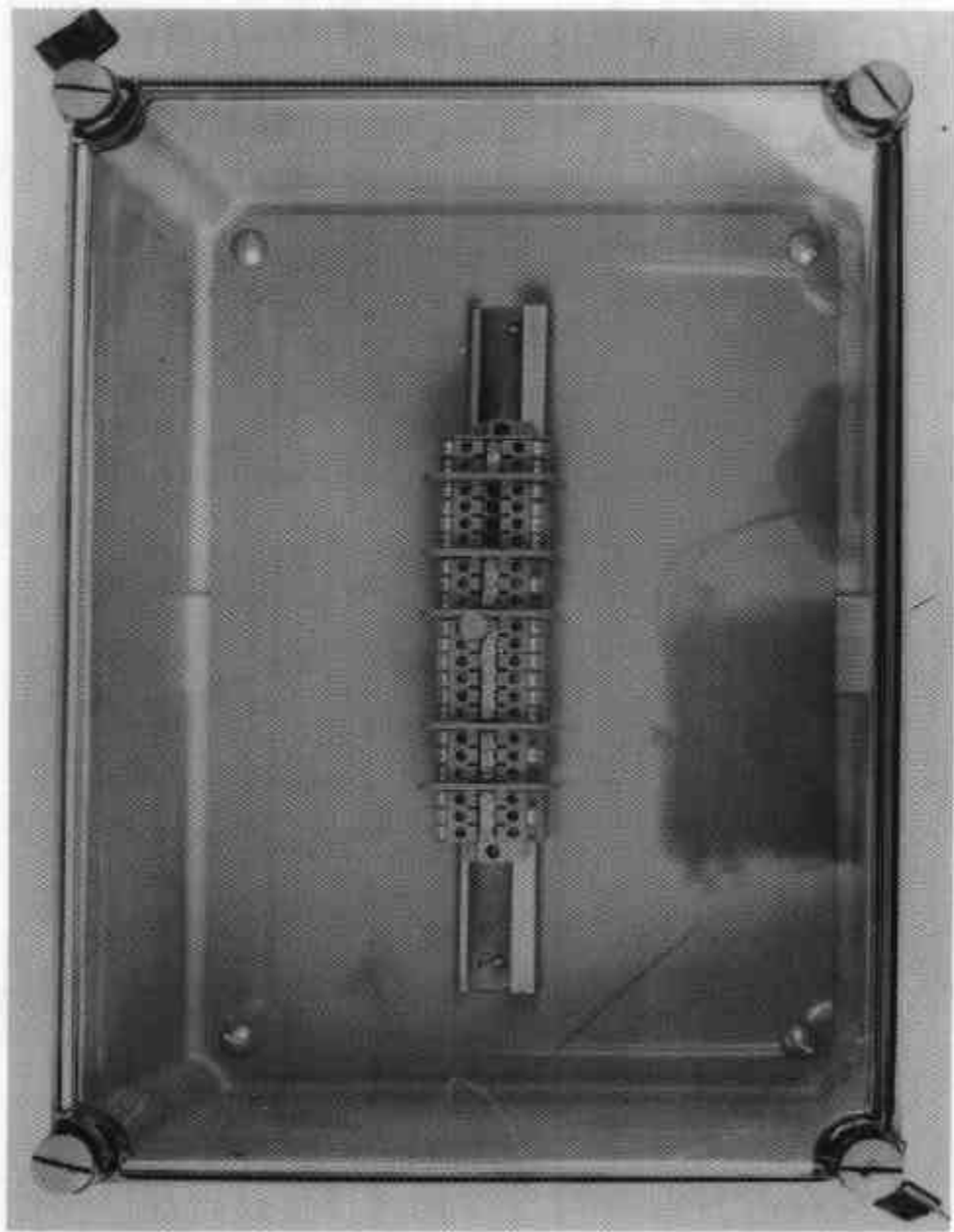
FIGURE P6/10B/39 - 1



Philips Indicator Model PR 1562

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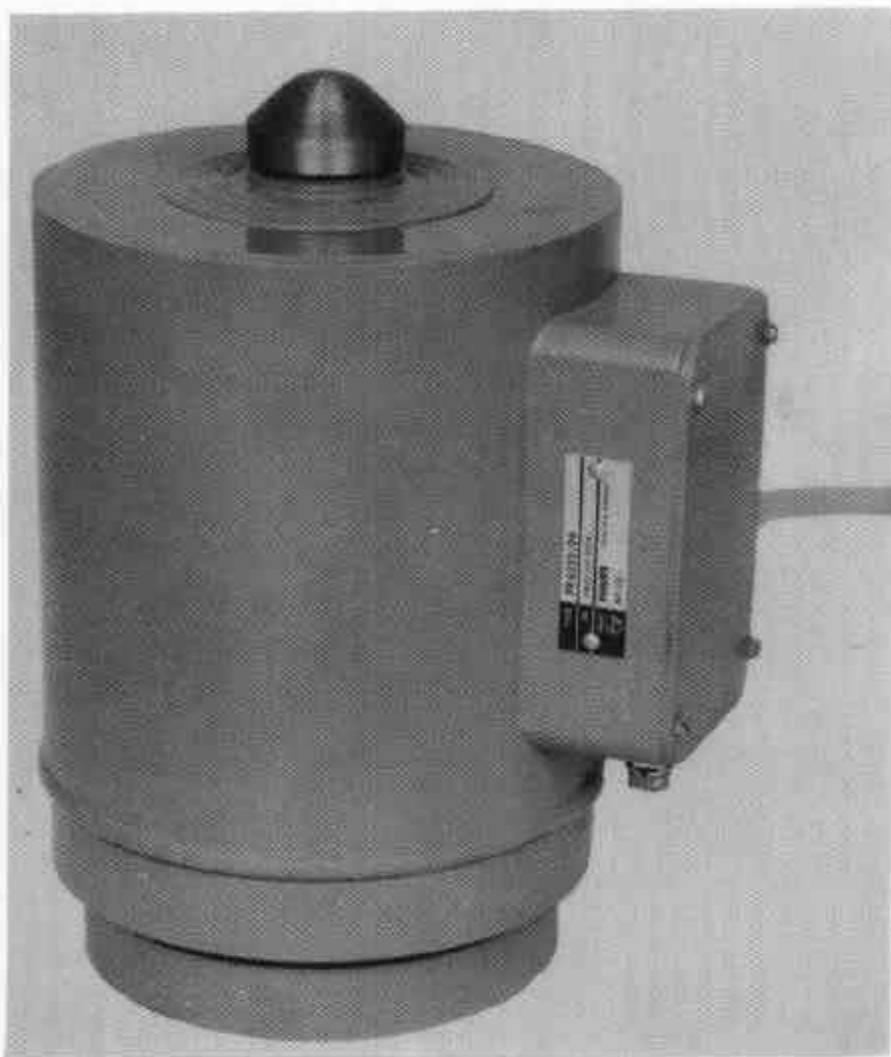
FIGURE P6/10B/39 - 2



Load Cell Junction Box

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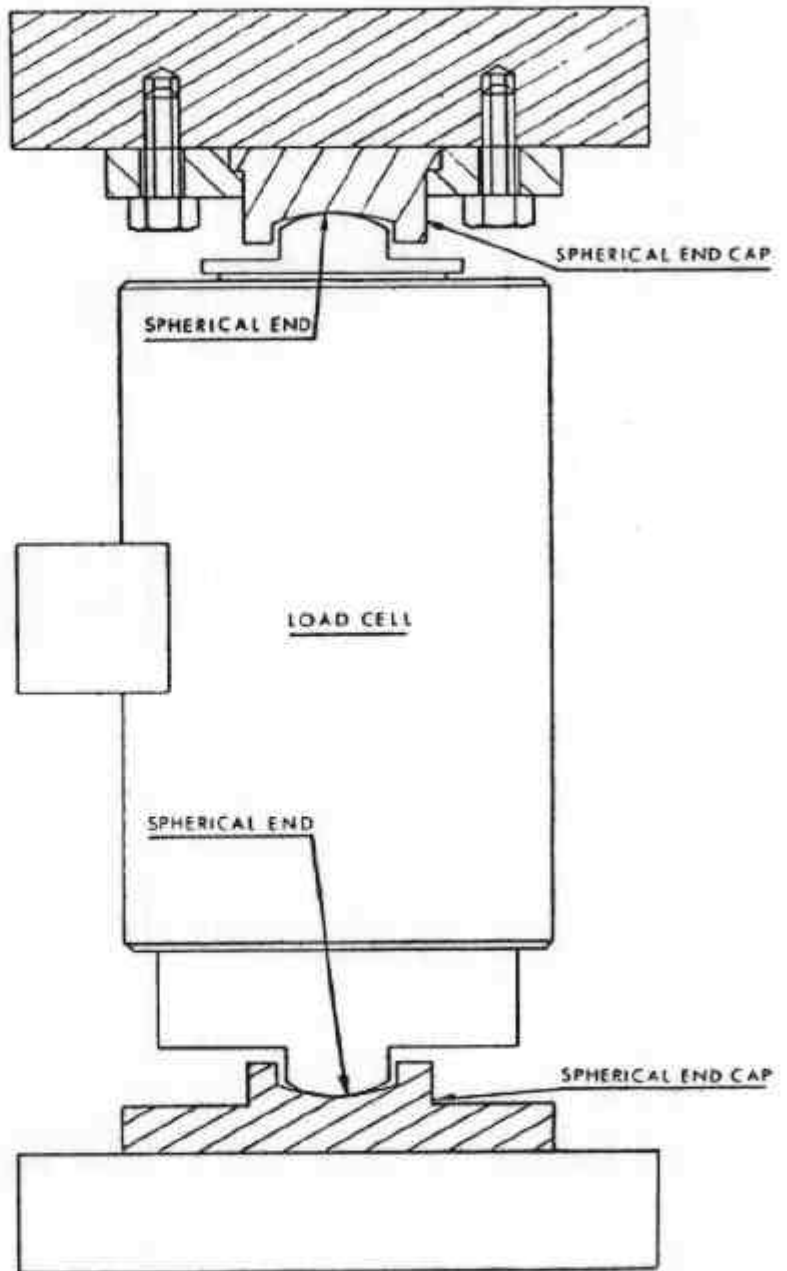
FIGURE P6/10B/39 - 3



Philips Load Cell 6222

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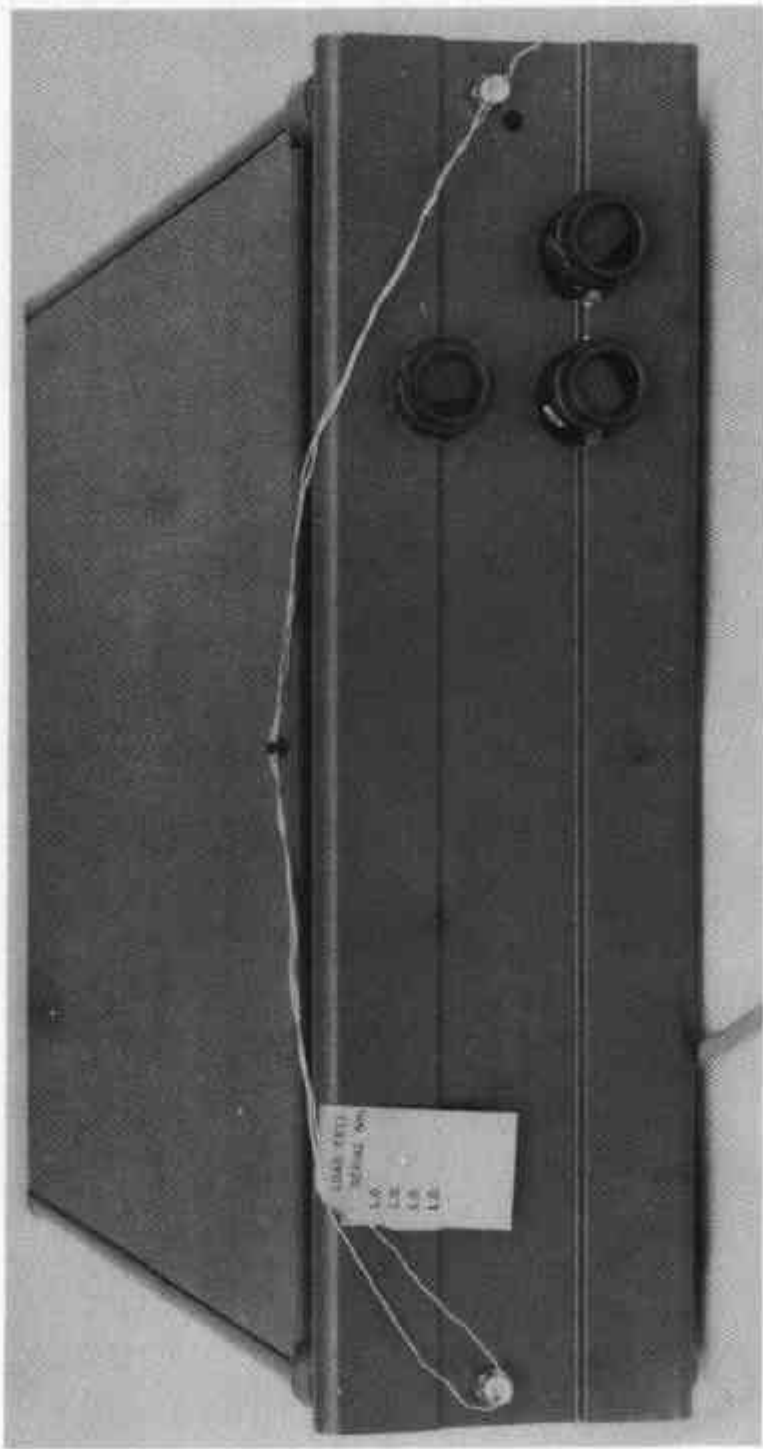
FIGURE P6/10B/39 - 4



Load Cell Mounting - Schematic Diagram

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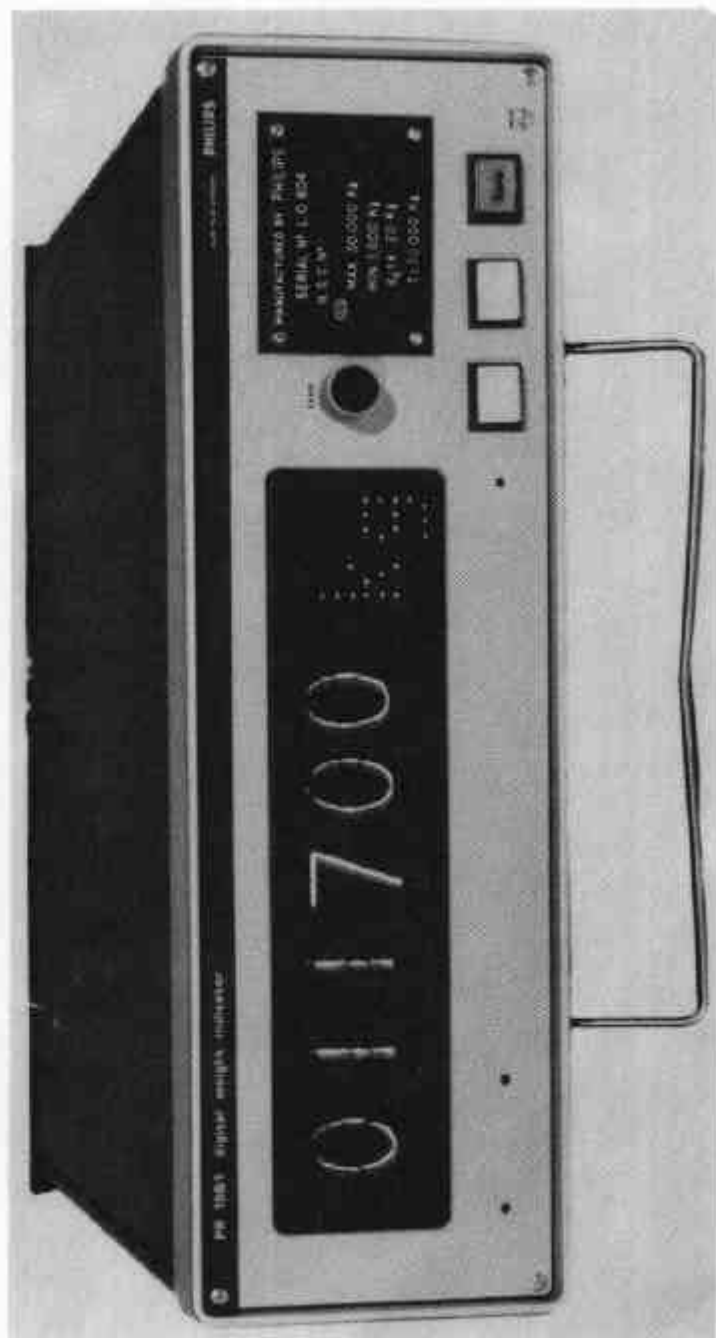
FIGURE P6/10B/39 - 5



Philips PR 1562 Indicator - Rear View
Showing Sealing

8/9/80

FIGURE P6/10B/39 - 6



Philips Indicator Model PR 1561