



Fig. 1
Philips Valve Tester "Cartomatic I" type GM 7629.

Philips Valve Tester GM 7629 is a service instrument capable of performing all the usual tests on radio valves, as well as current, voltage, capacitance and resistance measurements.

All the settings of the instrument are effected automatically by means of a contact box having 140 contacts (see Fig. 2) and suitably perforated cards (Fig. 3).

Only those contacts which are

opposite to the perforations can be closed, and the correct strappings for the currents and voltages required for the measurement are therefore automatically established. Measurement is extremely simple, quick and reliable, and the required cards are supplied with each unit.

The 140 conical, silver-plated contact pins are disposed opposite solid silver contact plates which are automatically maintained in a bright condition by the friction set up by the closing of the contact box. The latter also contains a safety contact, by means of which the mains circuit is closed only when the card has been correctly inserted.

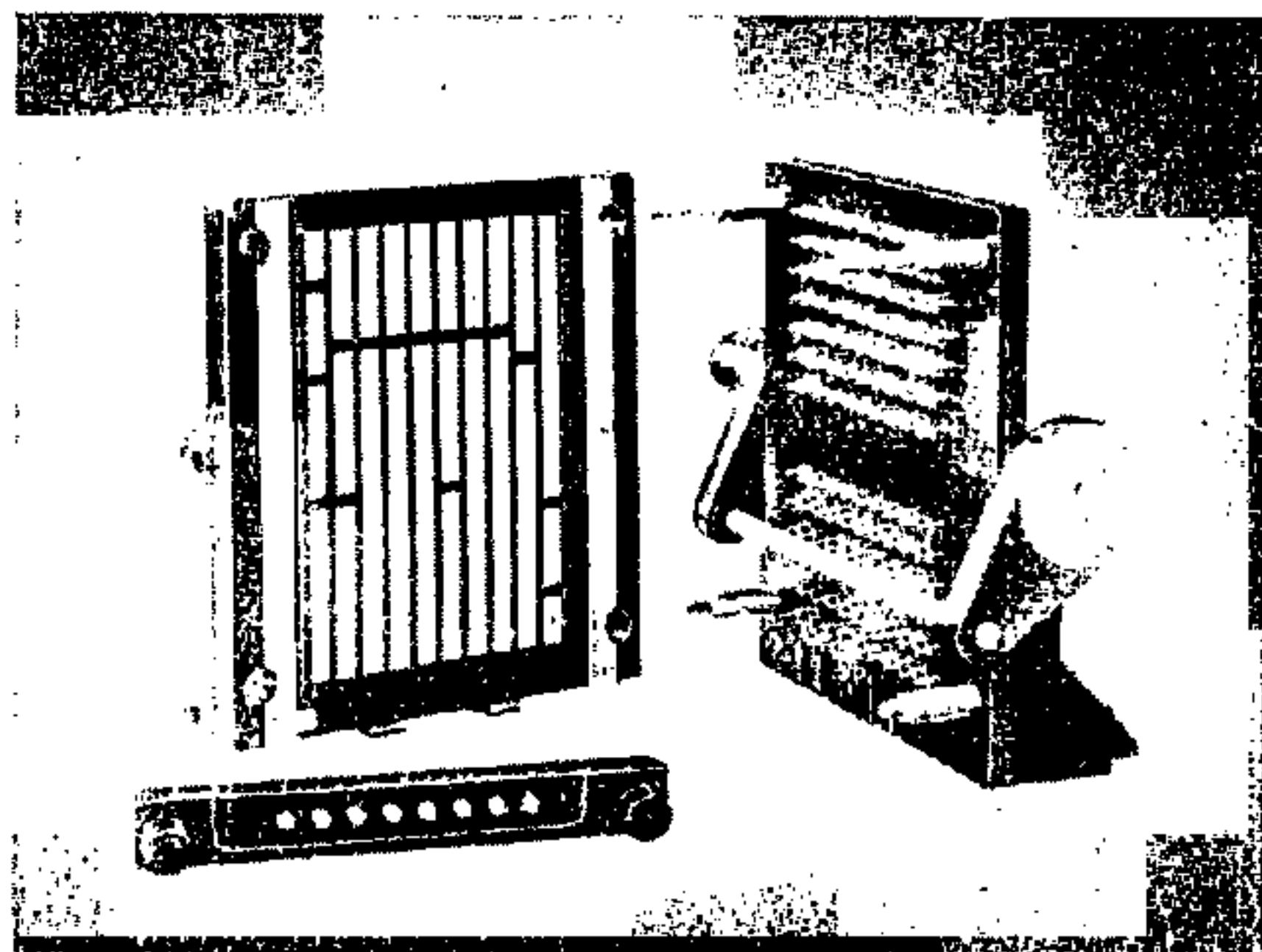


Fig. 2
Contact box with 140 contacts.

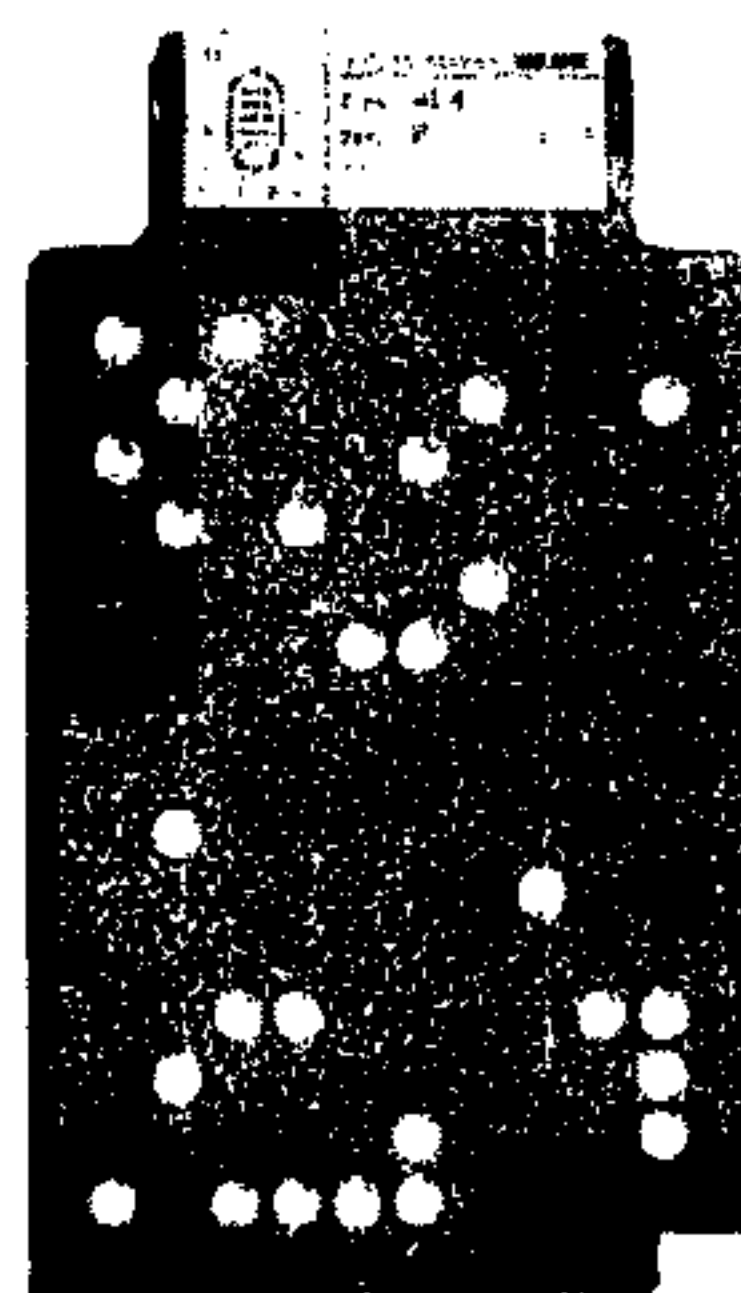


Fig. 3
Perforated card

The unit is equipped with 12 different types of valve-holders to accommodate almost every current type of valve base, British, Continental and American.

A particularly sensitive milliammeter is fitted, capable of giving full deflection on 0.5 mA, all the moving parts being of extremely light construction. The scale, which can be quickly read, is 80 mm in length, with an overall diameter of 105 mm, and the instrument is protected by a rectifier connected in parallel with it; a choke is included in series with this rectifier in order that the measurement of pulsating direct voltages may not be affected. For the measurement of the emission of all types of valves a special circuit is provided, whereby the limit at which a valve may be regarded as being no longer serviceable is in every case at the same point on the scale; if the pointer does not deflect beyond this point, in the red area on the scale; the valve emission is inadequate. It is therefore not necessary to work with tables of the limits at which different valves are considered to have lost their emission, thus effecting a considerable saving of time and trouble.

VALVE MEASURING

By operating in succession the eight switch buttons on the right-hand side of the panel, the requisite card having been duly inserted in the contact box and the latter closed, or not, a valve may be tested very quickly under the following headings:

1. Broken filament
2. Shorting electrodes
3. Contact between metallizing and relative pin.
4. Insulation between electrodes of "hot" valve.
5. Adequate emission
6. Mutual conductance
7. Open-circuited leads to the electrodes.

RANGES FOR D.C. MEASUREMENTS

Range	Internal resistance	Current consumption
10 —500 V	500,000 ohms	1 mA
2 —100 V	100,000 ohms	1 mA
1 — 50 V	100,000 ohms	0.5 mA
0.2— 10 V	20,000 ohms	0.5 mA

RANGES FOR A.C. MEASUREMENTS

Range	Internal resistance	Current consumption
50—500 V	500,000 ohms	1 mA
10—100 V	100,000 ohms	1 mA
5— 25 V	25,000 ohms	1 mA
1— 5 V	5,000 ohms	1 mA

RANGES FOR D.C. MEASUREMENTS

Range	Voltage drop
20 —1,000 mA	0.1—0.25 V
10 — 500 mA	0.1—0.25 V
2 — 100 mA	0.1—0.25 V
0.5— 25 mA	0.1—0.25 V
0.1— 5 mA	0.1—0.25 V

RANGES FOR A.C. MEASUREMENTS

Range	Voltage drop
100—1,000 mA	5 V
100— 500 mA	5 V
10— 100 mA	5 V
5— 25 mA	5 V

RANGES FOR RESISTANCE MEASUREMENTS

50,000 ohms	—	5 megohms
10,000 ohms	—	500,000 ohms
1,000 ohms	—	50,000 ohms
20 ohms	—	4,000 ohms
1 ohm	—	200 ohms

RANGES FOR CAPACITANCE MEASUREMENTS

10	—	200	μ F
1	—	20	μ F
0.1		2	μ F
0.03	—	0.5	μ F
1,000	—	30,000	$\mu\mu$ F

MEASUREMENT OF ALTERNATING OUTPUT VOLTAGES

For the measurement of the alternating output voltage of a receiver, three cards are provided, for ranges of 25, 100 and 500 V.

SHORT-CIRCUIT TEST

For detecting the presence of a short circuit, a neon tube is provided, which lights up when the test leads are shorted.

POTENTIOMETER FOR MAINS VOLTAGE

The unit is fitted with a potentiometer for the accurate adjustment of the mains supply, to ensure that all the tests are carried out at the correct potentials.

VALVES

AX 1	Full-wave rectifying valve for the anode feed.
1823 or 506 K	Full-wave rectifying valve for the grid bias.
2 $\times$ 4357	Neon stabilizers for control- and screen-grid voltages.
8041	Signal lamp to indicate broken filament.
9512	Neon tube for short-circuit test.

MAINS CONNECTION

The unit incorporates a tapping switch for use on all the mains supplies from 100 to 250 V, 50—100 c/s.

DIMENSIONS

Width	49 cm
Depth	40 cm
Height	28 cm

WEIGHT

Complete: 20 kg nett.