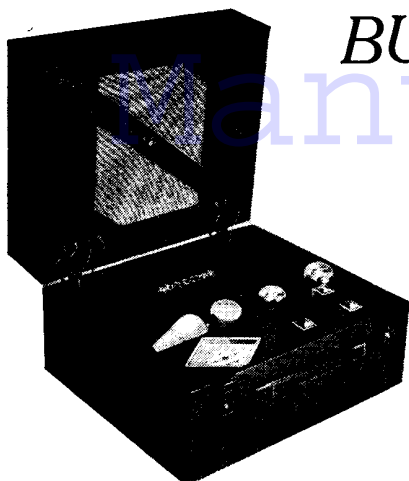


BURGOYNE SCREEN-GRID FOUR PORTABLE



The screen-grid four battery portable receiver produced by Burgoyne Wireless (1930) Ltd.

Circuit.—The H.F. valve is an H.F. pentode, SP2 met. (V1), and the frame aerial, which precedes it is a straight type in which

the long-wave section is short circuited for use on the medium waveband.

The following coupling is a choke capacity filter to the grid coil of the detector valve.

This is a PM1HL met. (V2) and operates as a leaky-grid detector with reaction. A refinement lies in the provision of zero bias by taking one grid leak to the positive and another to the negative filament lead.

The L.F. coupling is by straight transformer to (V3) a PM1LF, which is again coupled by a transformer to the output valve, which is either a PM2 or PM2A.

Tone compensation for top-note accentuation is provided by a condenser between the anode and chassis, and in some models by an additional condenser between the grid and chassis. The speaker is a typical moving-iron type.

Special Notes.— Battery voltages : H.T.+1, 54 volts; H.T.+2, 99 volts; G.B.—1, 1.5 volts; G.B.—2, 4.5 to 6 volts.

The combined H.T. and G.B. battery is a Drydex type S.53.

Quick Tests.—These are best performed by noting the noises produced in the speaker while making the routine valve tests.

Note that any metallic contact with the chassis, battery leads or metallising on the valves will produce a slight click if the L.F. section is working.

Removing Chassis.—Remove the batteries and unscrew the four holding screws round the edge of the panel. The chassis can then be turned over to lie on top of the battery compartment without disconnecting any leads.

General Notes.—The switch has six contacts, three on each side. Numbering them

from the panel, those on the side nearer the reaction condenser are :—

- (1) Tapping on frame aerial.
- (2) L.T.—
- (3) Tapping on V2 grid coil.

On the other side the connections are :—

- (1) Blank.
- (2) L.T.—
- (3) Blank.

The centre terminals of 1, 2, 3 and 5 are connected to chassis earth.

The terminals on the L.F. transformers are prominently labelled.

To remove the condenser frame complete with the condensers, remove the large and small tuning knobs (grub screw) and undo the one-hole fixing nut; release the spindle of the aerial tuning condenser (nearer the panel) by undoing the grub screw. The whole assembly can then be lifted from the chassis.

The lay-out and construction are particularly simple, and the examination of and replacement of any component can be carried out without any difficulty.

Replacing Chassis.—Before replacing the chassis examine the leads where they pass under the metal valve deck, lay the chassis on the supports, and replace the holding screws.

COMPONENT VALUES

C.	Purpose.	Mfd.
1	V1 aux. grid decoupling ..	.1
2	H.F. feed to V2 grid coil ..	.0001
3	V2 anode decoupling ..	.01
4	V2 grid reservoir ..	.0001
5	Tone compensating V4 grid*	.002
6	Tone compensating V4 anode	.002
*Not in all models.		
R.		Ohms.
1	V2 grid leak ..	1 meg.
2	V2 grid leak ..	1 meg.
3	V2 anode decoupling ..	25,000
4	Across secondary of second L.F. trans.	.25 meg.

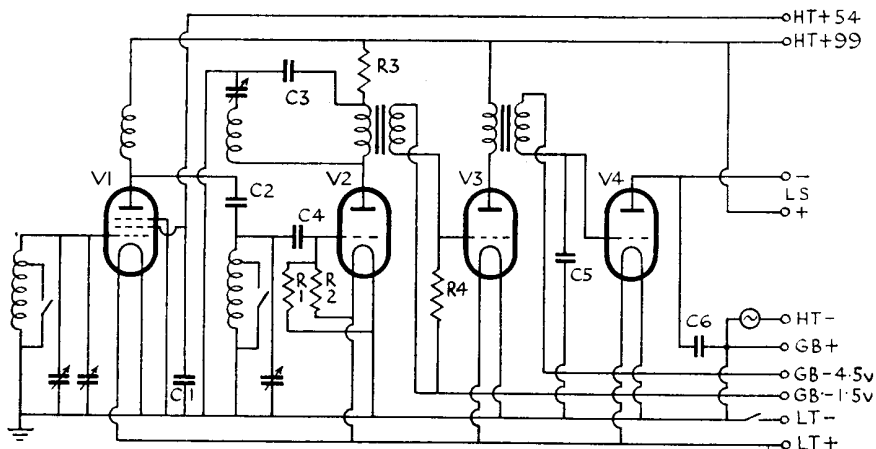
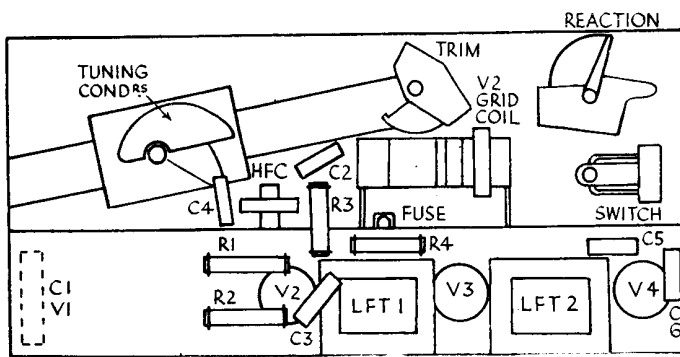
VALVE READINGS

Valve.	Type.	Electrode.	Volts.	M.A.
1	SP2 met (4) ..	anode ..	100	.1
		aux. grid ..	54	
2	PM1HL (4) ..	anode ..	58	1.4
3	PM1LF (4) ..	anode ..	97	3.8
4	PM2 (4) ..	anode ..	97	*6.6

*With G.B.—2, 4.5 volts.

The chassis diagram on the right shows the positions of all components in the Burgoyne receiver. The connections for the switch are given under the "General Notes" heading in the text.

As the circuit below shows the Burgoyne Screen-grid Four is a perfectly orthodox production using screen-grid, detector and two transformer-coupled L.F. valves. C3 is simply a decoupling condenser employed in conjunction with R3.



Philco Set Tester

An improved model of the 048 test set, known as the 048A, has been received from the Philco Radio and Television Corporation of Great Britain, Ltd. The instrument, which consists of a signal generator and universal multi-range meter in a serviceable mahogany case, now retails at 12 gns.

The ranges now available are: D.C. or A.C. currents, 10 ma., 100 ma., 10 amp; D.C. or A.C. volts 10, 30, 100, 300 and 1,000; resistances, 150 ohms, 150,000 ohms, 1.5 megohms. A zero adjuster is provided for resistance measurements.

On test the ranges were found to be sufficiently accurate for all service requirements and the oscillator wave ranges were found to be 180-400, 300-630, 600-1,350 and 1,250-2,850 metres. Modulation and waveform are satisfactory, and the attenuator enables signals suitable for simple or highly sensitive sets to be obtained.

Service men should find the tester extremely useful and entirely sound.