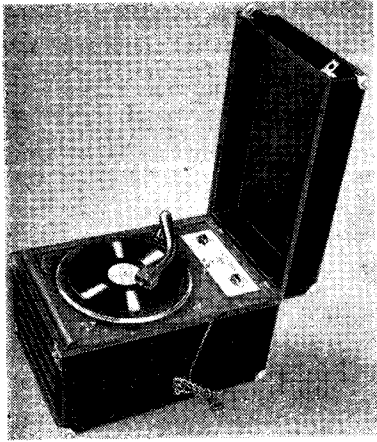
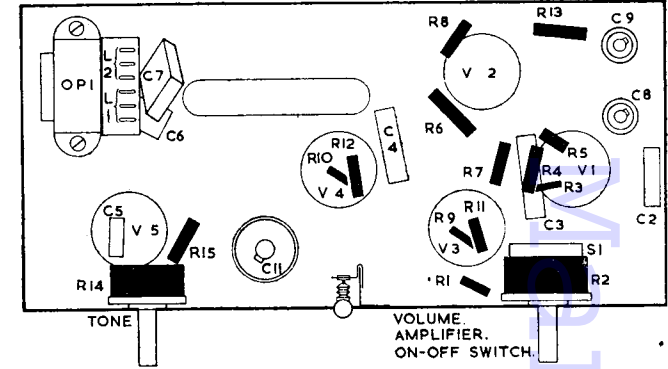
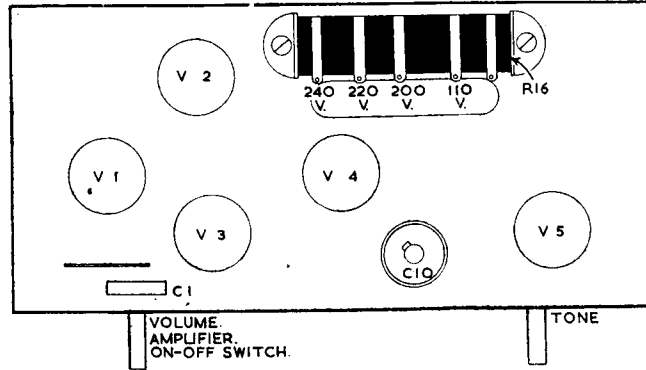


PORTOGRAM JUNIOR EIGHT



AC-operated record reproducer consisting of a five-valve amplifier, with push-pull output, and an electric turntable and magnetic pick-up, fitted with automatic stop-start switch. Housed in a leatherette-covered wood cabinet fitted with carrying handle. Designed for 100-130, 200-250 volts 50 c.s. Manufactured by Portogram Radio Electrical Industries Ltd., Sgropo Works, St. Rule Street, SW8.



CIRCUIT consists of a triode amplifier V1, feeding a paraphase driver valve V2. The output stage uses two beam power valves V3, V4, in push-pull. The output is fed into an eight-inch energised speaker. HT is supplied by half-wave indirectly heated rectifier, V5.

The gramophone unit consists of a Collaro AC induction motor fitted with 12in. turntable and magnetic pick-up with auto stop and start mechanism.

Pick-up is a high-resistance type connected by screened cable and series resistor R1 to the volume control R2, and thence to grid of pre-amplifier valve V1. Cathode bias is provided by R4 and decoupled by C8. R3 is the anode load resistor.

Paraphase driver stage. C2 feeds the signal from anode V1 to grid V2. R6 is the cathode bias resistor and R5 is its grid resistor. V2 has its screen strapped to its anode and is operated as a triode. Load resistors R7, in the anode circuit, and R8, in the cathode circuit, produce signals of opposite phase to drive the push-pull output valves V3, V4.

Push-Pull Output Stage. C3 feeds signal from anode V2 to grid of one of push-pull valves V3. C4 feeds signal from cathode load resistor to the other push-pull output valve V4. R9 and R10 are grid resistors of V3, V4 respectively. Cathode bias for V3 and V4 is obtained from resistor R13, which is common to both valves. C9 is cathode decoupling capacitor. Screen voltages are obtained from the main HT line.

HT for anodes V3, V4 is fed through centre-

RESISTORS

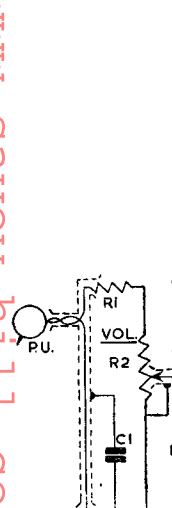
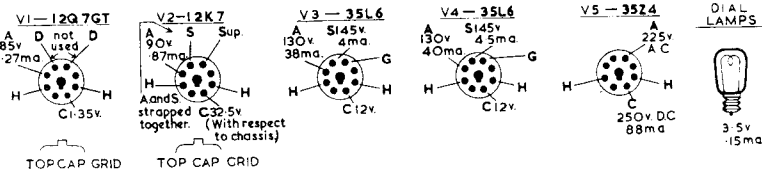
R	Ohms	I	W
1	100 K.	1	1 MEG $\frac{1}{2}$ W
2	100 K.	11	100 $\frac{1}{2}$ W
	(With Switch)	12	100 $\frac{1}{2}$ W
3	100 K.	13	150 $\frac{1}{2}$ W
4	680 $\frac{1}{2}$ W	14	50 K. Potent.ometer
5	1 MEG $\frac{1}{2}$ W	15	33 $\frac{1}{2}$ W
6	680 $\frac{1}{2}$ W	16	850 Tapped Mains Dropper (150-500 +100-100)
7	47 K. $\frac{1}{2}$ W		
8	47 K. $\frac{1}{2}$ W		
9	1 MEG $\frac{1}{2}$ W		

CAPACITORS

C	Mfds	V
1	.005 Tubular	500 v
2	.05	350 v
3	.1	350 v
4	.1	350 v
5	.01	500 v
6	.001 Mica	
7	.001 Mica	
8	.25 Electrolytic	25 v
9	.25	25 v
10	.32	Electrolytic 250 v
11	.32	

INDUCTORS

L	Ohms
1	500
2	.5
3	very low
4	2
5	1000
PU	2250



For more information remember www.savoy-hill1.co.uk

JUNIOR EIGHT—Continued

tapped primary L1 of output matching transformer OPI. R11, R12, C6, C7 are fitted to prevent parasitic oscillation taking place in the output valves. Variable tone control is provided by C5 and R14. L2, the secondary of OPI, feeds the signal through series-connected hum-bucking coil L3 to low-impedance speech coil L4 of the eight-inch energised loudspeaker.

High tension is obtained from an indirectly heated half-wave rectifier V5. Its anode voltage is obtained from the input mains supply through limiter resistor R15. HT smoothing is provided by loudspeaker field coil L5, together with electrolytic capacitors C10, C11.

Heaters of V1 to V5 and filament of indicator lamp are series connected and obtain their current through tapped mains dropper resistor R16. R16 is tapped for input voltages 100-250 volts.

On-off switch. S1, which is ganged to the volume control, is the amplifier on-off switch.

Test Reports

Labgear Electronic Fault Tracer

THE Labgear "Electronic Fault Tracer" is designed to combine in a single piece of apparatus all the chief items of test gear which a service man normally requires in fault tracing. The instrument contains a signal generator covering a range of 100kc/s to 30mc/s in five bands, all using fundamental frequencies. By using the second harmonic of the 30mc band the range is extended to 60mc/s. The RF oscillator can be modulated at approximately 1000 c/s at a depth of 30 per cent.

The audio frequency of 1000 c/s can be used separately for AF fault tracing, amplitude of output being variable up to approximately 2V.

When the instrument is used as a signal tracer the RF oscillator and modulator valves function as a detector and AF amplifier respectively. A probe is used to trace the signal from point to point in the receiver under test. Headphones or "magic-eye" valve can be used for indication of output.

A resistance-capacity bridge is incorporated. It is excited at 1000 c/s and balance is indicated by "magic-eye" valve. The resistance range covers from 1 ohm to 10 megohms in four bands, and the capacity range from 25mmFd to 50mFd, also in four bands.

A neon lamp insulation tester is another feature and can be used to test condensers and transformers.

The applied test voltage is adjustable up to 440V. If required an external voltage may be fed in for this series of tests. The presence of AC or DC voltage can be detected and roughly measured by varying the voltage control and noting at what setting the neon indicator strikes. The same device can be used as an output indicator for approximate or rough alignment of receivers.

A built-in power supply may be used for test purposes. It supplies 350V at 50mA fully smoothed and 6.3V and 4V for valve heaters up to 2.5A. The instrument is soundly constructed and housed in a black crackle finished metal cabinet. The upper

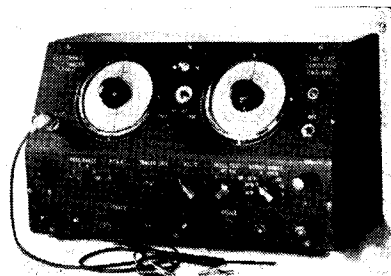
Gramophone unit is a Collaro induction motor type AC37 fitted with 12in. turntable and high-resistance magnetic pick-up. The motor is designed to work on AC voltages 100-130 and 200-250 at 50 c/s. The motor is fitted with auto stop switch operated by the movement of pick-up.

Removal of chassis and speaker. Before attempting to remove the motor board, the turntable should be taken off and the pick-up should be securely fastened to its rest arm by means of string or piece of wire.

Remove four round-headed screws holding motorboard in position. Carefully lever up motor board at end nearest hinge of lid and slide it forward about half an inch and lift clear of cabinet. Care should be used when doing this to avoid damaging the amplifier chassis.

Remove two round-headed screws on either side of loudspeaker louvres on front of cabinet. Loudspeaker complete with baffle can now be slid out of its retaining groove.

NOTE: When making adjustments for mains voltages it is necessary to alter the taps on motor in addition to those on the amplifier.



half of the front panel containing the two calibrated dials is set back at a convenient angle for easy reading and adjustment of dials. The instrument is compact, dimensions being 16 by 9 by 7in., and its weight 24 lb.

We found it to be accurately calibrated and reliable. Due to the many functions it performs a full understanding of its many controls is necessary before putting the instrument into use.

A detailed booklet gives the user full instructions. Designed to operate on 200-250V 50 c/s, it is manufactured by Labgear of Cambridge and is priced at £34 10s.

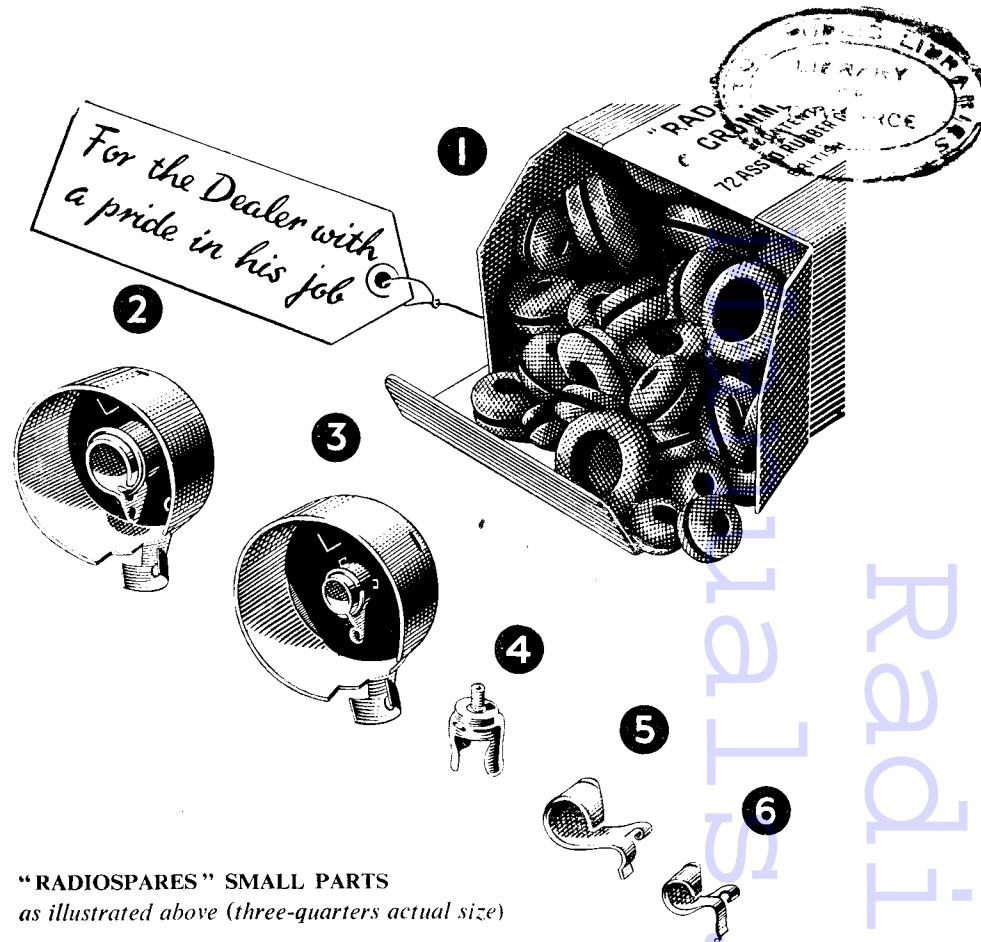
SENSITIVE COIL TESTER

THE "Sensitive" coil tester is intended for the testing of tuning coils for shorted turns and is suitable for factory or service workshop.

Its meter can be set up with a known good coil and other similar coils checked against the standard deflection. Alternatively, any unknown coil can be tested for short-circuits. We found that a single shorted turn of 40-gauge wire caused noticeable movement of the pointer.

Coils can be checked for continuity, as distinct from short-circuits by connecting the leads together, thereby obtaining a large deflection if the coil is in good order.

Operation is simple, there being only two controls, and construction is workmanlike. The tester is distributed by J. Bull (Ruislip), Ltd.



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as illustrated above (three-quarters actual size)

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Containing 72 assorted Rubber Grommets, from $\frac{1}{8}$ " to $\frac{3}{4}$ " @ 3/3d. per Kit.

No. 2 SCREENED GRID-CAPS

Standard Size @ 6d. each.

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Octal Size @ 6d. each.

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For use with both Anode and Grid Top Valves @ 2/3 per doz.

No. 5 GRID-CAPS, PUSH-ON

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No. 6 GRID-CAPS, PUSH-ON

Octal Size. @ 4d. per doz.

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MUSEum 9301/6

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