1117 'ERT' SERVICE CHART FERGUSON 393G "FORTUNE"

PORTABLE four-speed, auto-changer record reproducer, employing two triode-pentode valves, plus metal rectifier and printed-circuit technique. The circuit incorporates a push-pull output stage.

Date released. May, 1957.

Price at time of release, 25gns. inclusive.

Manufacturer. Thorn Electrical Industries, Ltd., 105-109, Judd Street, London, WC1.

Service departments. London—145, Kentish Town Road, NW1; Birmingham, 15—24, Sheepcoat Street; Glasgow, 1—9-15, Waverley Street; Manchester, 1—9, Stevenson Square.

Weight. 24 lb.

Mains supply. 200-250V 50c/s AC.

Loading. About 38 watts.

Speaker. Twin-cone 6½in. diameter.

Output. 6 watts.

Valves. Two Mullard type UCL83.

Pilot lamp. 8V 0.15A MES.

Auto-changer unit is Collaro Challenger—four-speed with turnover crystal pickup. This is a special model supplied only for use with the 393G and is not interchangeable with the standard Collaro Challenger.

CIRCUIT DETAILS

Heater supply for the two valves is obtained by connecting the heaters in series with the induction motor of record changer. This provides the necessary voltage drop on 226-250V supplies; on lower voltages a 4.7k 3watt resistor (R18) is connected across the motor windings.

Push pull amplifier uses two triode-pentodes, type UCL83. Pentode sections form the output stage, while one triode (V2A)

Continued overleaf

COMPONENT RATINGS

Capacitors

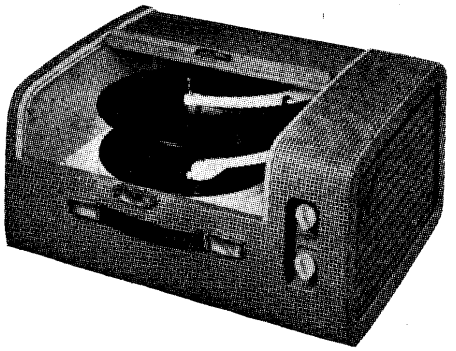
300V AC: C1-4 14.
Electrolytic 275V : C12 13.
Electrolytic 25V : C6 10.

Potentiometers

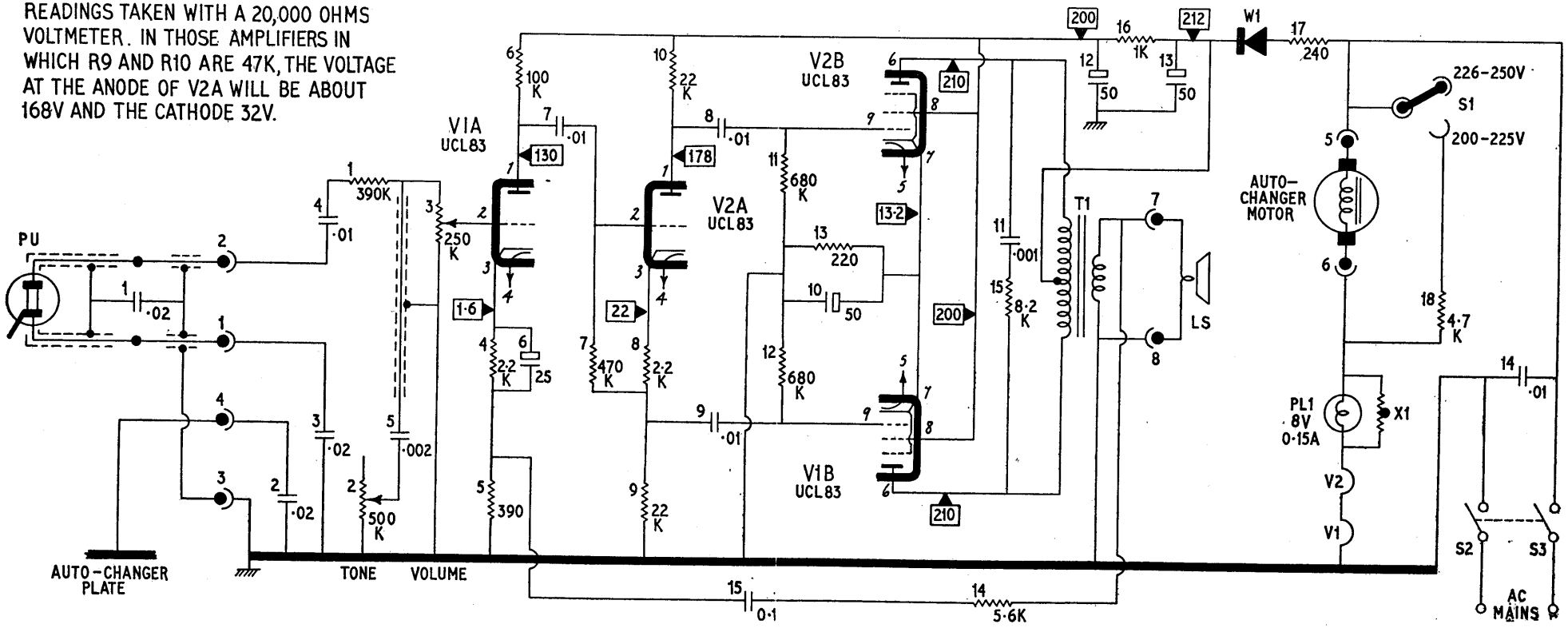
Rev. log: R2
Log: R3.

Resistors

3watt : R17 18.
1watt: R13.
½watt: R15.
All others ¼watt.



READINGS TAKEN WITH A 20,000 OHMS VOLTMETER. IN THOSE AMPLIFIERS IN WHICH R9 AND R10 ARE 47K, THE VOLTAGE AT THE ANODE OF V2A WILL BE ABOUT 168V AND THE CATHODE 32V.



FERGUSON "FORTUNE"

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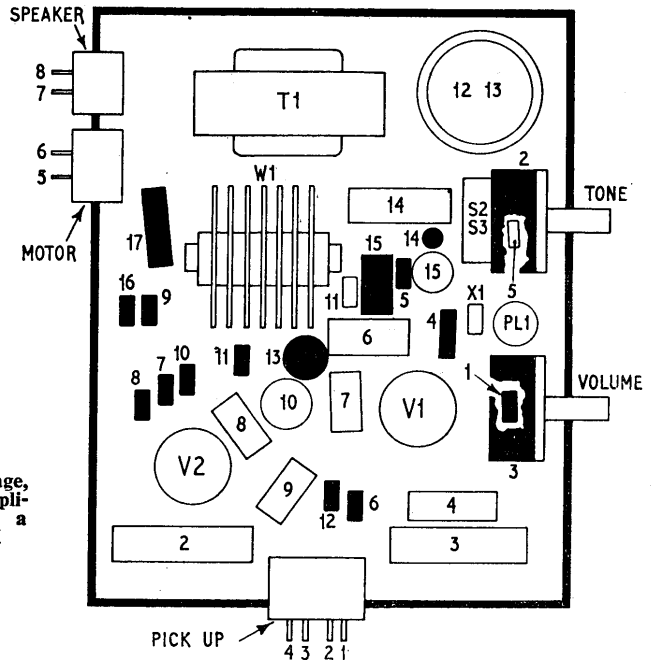

The two-valve, three-stage, plus metal rectifier amplifier is assembled on a printed-circuit panel

works as phase inverter and the other (V1A) functions as input voltage amplifier.

Tone and volume controls operate in grid circuit of V1A—a negative feedback voltage from secondary of output transformer is injected across R5 in its cathode circuit. C15 reduces feedback at low frequencies to provide a degree of bass lift in the amplifier response.

DISMANTLING

Removing auto-changer unit requires that panel to right of unit compartment be removed and the two screws securing mains voltage adjustment panel withdrawn. The two leads from voltage adjustment panel are terminated in a clip connector on printed-circuit board, which, when removed, releases the connecting leads to auto-changer motor.

Changer unit mounting board fits into a groove in front of case and is fastened by four screws. Take out these screws and slide board to rear to release front edge. Lift left side of board and hold in position at about 45 deg., so that connector on bottom edge of printed panel can be unclipped and auto-changer withdrawn.

Removing amplifier panel necessitates withdrawal of changer unit (see above) and the releasing of the clips securing the scale panel to case. Do not try to pull off control knobs.

Printed-circuit panel is held in position by a screw and rubber grommet at rear, and a small strip of wood at the top. Once these have been removed, the panel can be pushed to the rear so that controls are clear of case and then lifted out as far as mains connecting leads to on-off switch will allow.

PRACTICAL HINTS

Printed circuit. Excessive heat will loosen the bond between copper conducting circuits and the board. Therefore, when replacing a resistor or capacitor cut out the faulty component leaving as much as possible of the original lead-out wires on the board for connection of the replacement—soldering to the ends of these wires, rather than to the printed conductors, with a small, low consumption iron, and not applying the bit for longer than is necessary for the making of a sound joint.

Heavier components are secured to panel by clip lugs, which also make the electrical connections to panel. A heavier type of iron is required to remove them, and when the solder melts, the lug should be pressed clear of the connecting point. A small stiff-haired brush will sometimes help break the connection.

Should it become necessary to solder direct to a printed conductor, a 60/40 resin-cored solder should be used and not a corrosive flux.

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