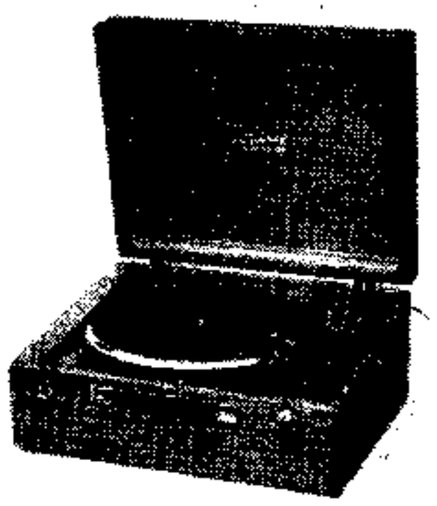
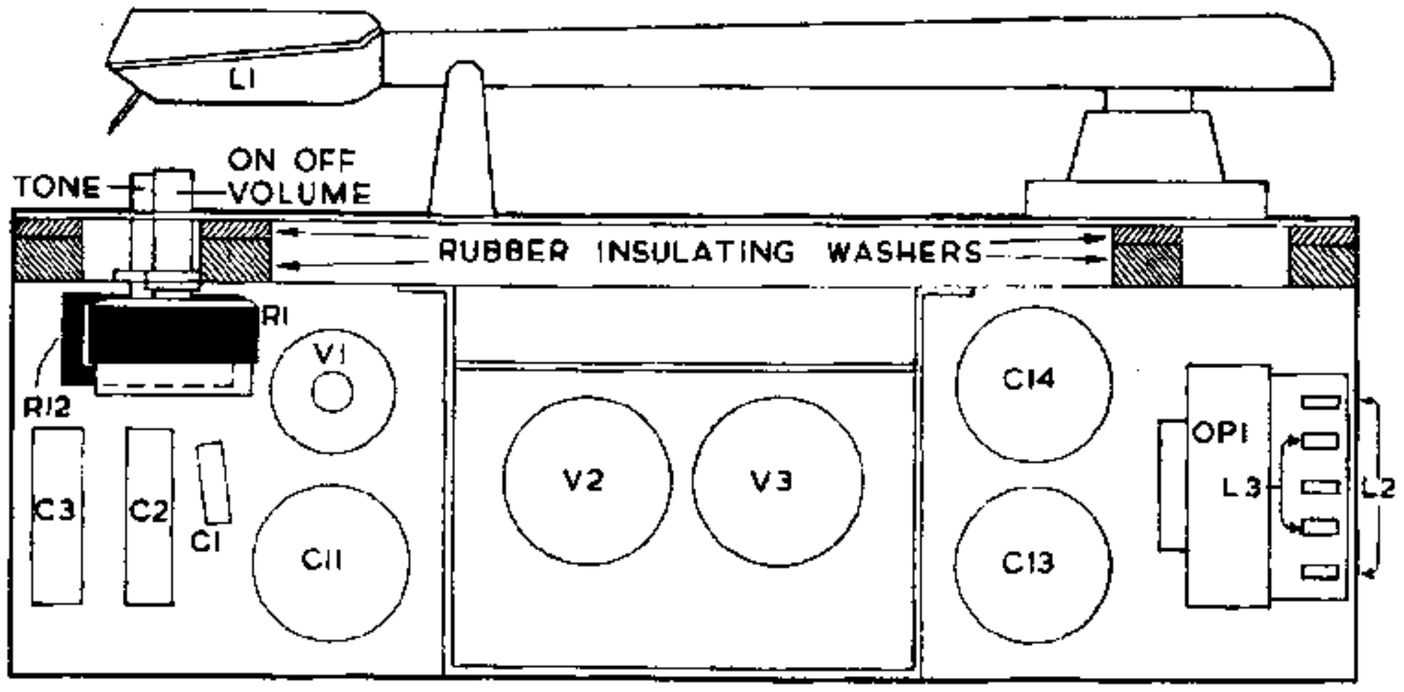
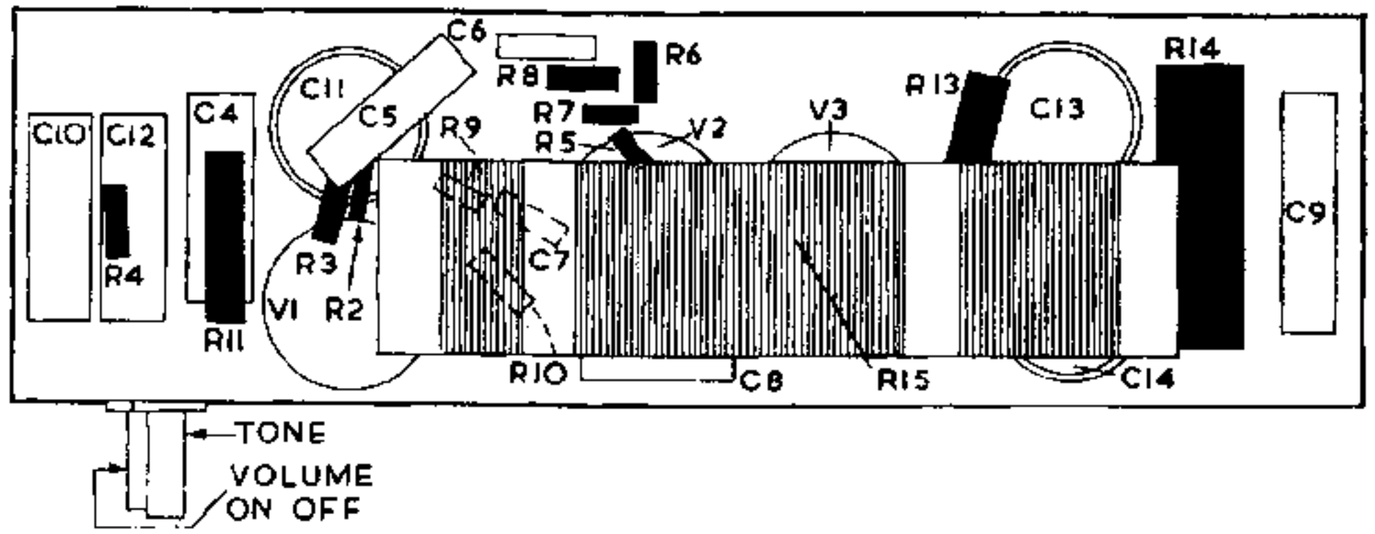
COLLARO MICROGRAM



Portable electric gramophone fitted with Collaro induction motor, 12-in. turntable, magnetic pick-up and automatic stop mechanism. Pick-up feeds into two-stage, three-valve amplifier fitted with 5-in. PM speaker. Designed to operate on 50/60 cycle AC mains supplies of 100-125, 200-250V. Housed in light brown rexine covered carrying case fitted with handle. Manufactured by Collaro Ltd., Barking, Essex.





AMPLIFIER circuit consists of a high-gain RF pentode V1 resistance-capacity coupled to a pentode output valve V2. Output is fed into a 5-in. PM speaker. HT is provided by an indirectly heated half-wave rectifier V3.

Pick-up is of high-resistance magnetic type and is coupled by means of isolating capacitors C2, C3 across the volume control R1 and thence to grid V1. Screened lead of the pick-up is earthed through capacitor C1. Cathode bias for V1 is developed across R4 and decoupled by C10. Screen voltage is obtained from R2 and is decoupled by capacitor C4. R3 is the anode load.

Output Stage. C5 feeds signal at anode V1 to grid V2, via R7 and grid stopper R8. R5 shunted by R6 is the grid resistor of V2. R7, R6, C6 constitute a bass boost circuit to compensate for recording characteristic. However, after the amplifier had been in production for a time, it was found that on certain recordings the bass lift appeared to be excessive. To overcome this, C6 was shorted out. If so desired, the original bass lift may be restored by removing the short across C6.

Cathode bias for V2 is provided by R11, decoupled by C12. Screen voltage is obtained from R9, which also supplies HT to anode and screen of V1. C11 is screen decoupling and HT-line smoothing capacitor.

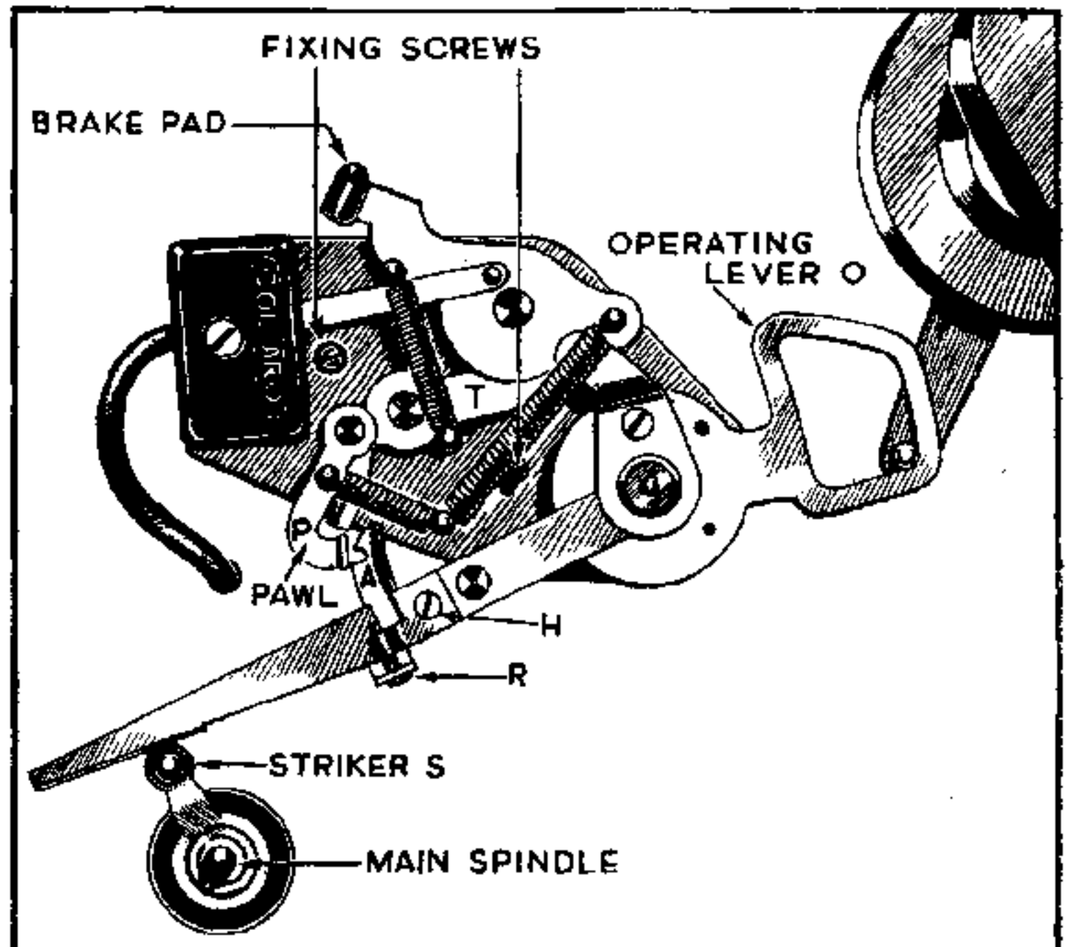
L2, the primary of OP1, the output matching transformer, is in the anode circuit of V2. R10 is anode stopper resistor and C7 offsets rise in impedance of L2 at the higher frequencies.

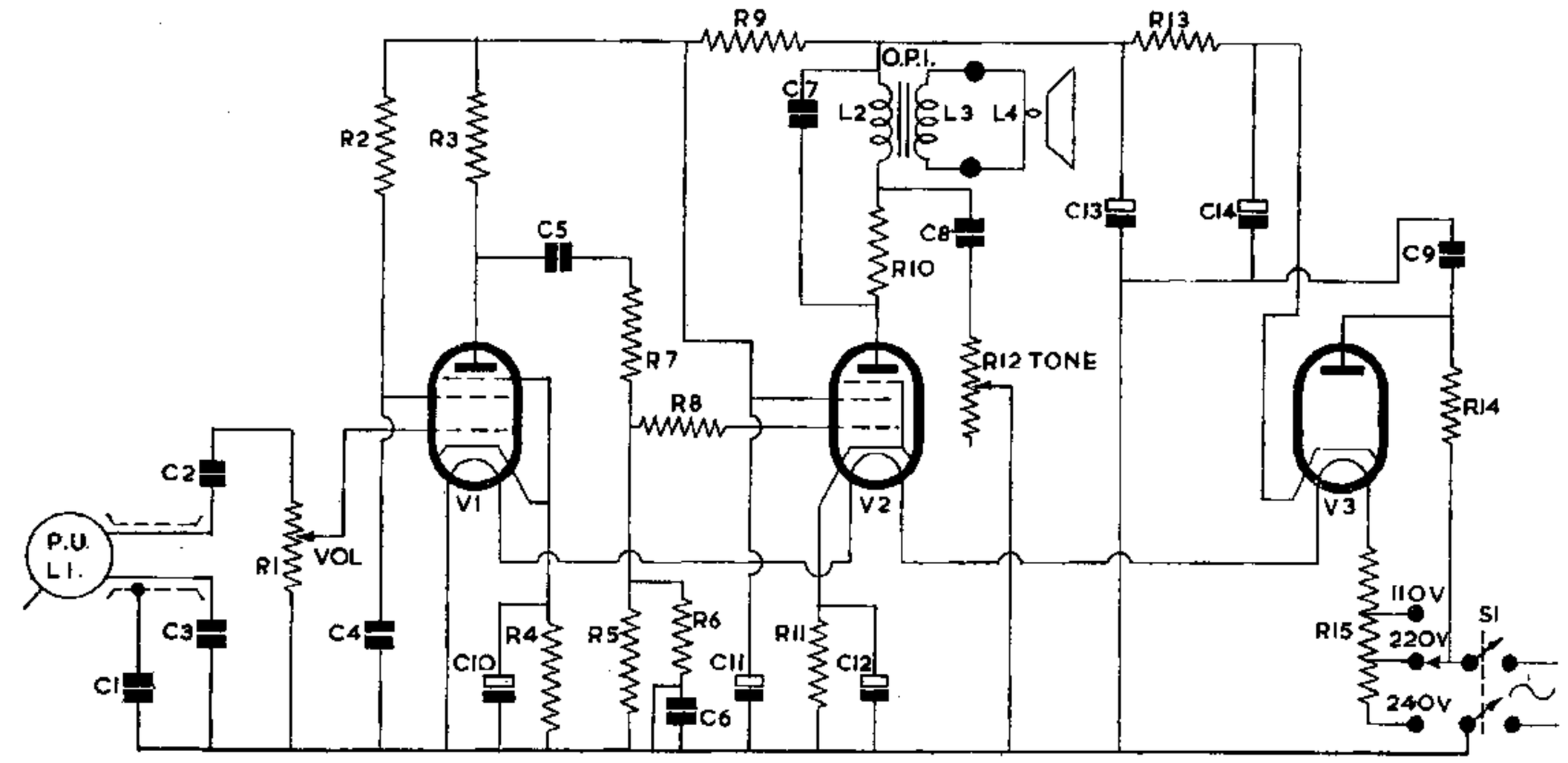
R12, C8 provide variable top cut and will be found useful in reducing record surface noise on old or worn records.

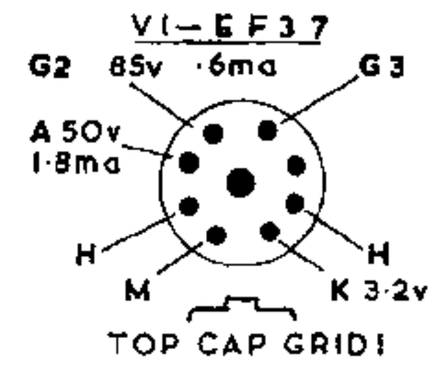
L3, the secondary of OP1, feeds into a 5-in. PM speaker L4, which is mounted at the side of the case.

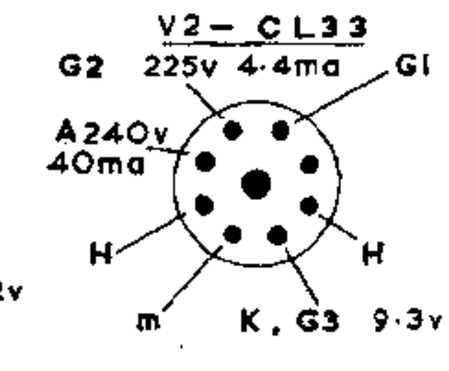
High tension is supplied by an indirectly heated half-wave rectifier V3. Its anode voltage is obtained from the mains, through limiter resistor

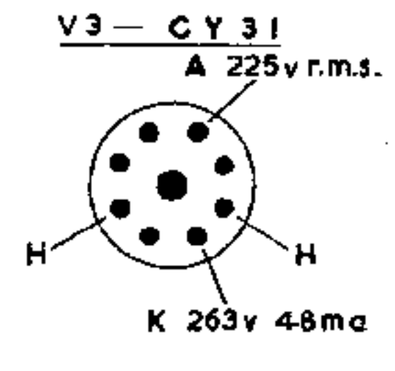
(*continued overleaf*)











RESISTORS

R	Ohms	Watts
1	250 K	Potentiometer with DP Switch
2	220 K	½ W
3	100 K	½ W
4	1.5 K	½ W
5	680 K	½ W
6	22 K	½ W
7	220 K	½ W
8	10 K	½ W
9	4.7 K	½ W
10	68	½ W
11	200	1 W
12	50 K	Potentiometer
13	200	1 W
14	100	3 W
15	887	36 W, Tapped 262 and 762

INDUCTORS

L	Ohms
1	2.2 K
2	240
3	.4
4	2.5

CAPACITORS

C	Mfds	Type
1	.01	Tubular, 350 V
2	.1	Tubular, 350 V
3	.1	Tubular, 350 V
4	.25	Tubular, 350 V
5	.1	Tubular, 350 V
6	.01	Tubular, 350 V
7	.001	Tubular, 350 V
8	.05	Tubular, 350 V
9	.1	Tubular, 350 V
10	50	Electrolytic, 12 V
11	32	Electrolytic, 350 V
12	50	Electrolytic, 12 V
13	32	Electrolytic, 350 V
14	32	Electrolytic, 350 V

COLLARO MICROGRAM

—Continued

R14. R13, C13, C14 provide resistance-capacitance smoothing of the HT supply and C9 is fitted to eliminate modulation hum.

Heaters of V1 to V3 are series connected and obtain their current from the mains through tapped voltage dropper resistor R15. R15 is tapped for input mains voltage of 100-125 and 200-250V AC. S1, which is ganged to the volume control R1, is the amplifier on / off switch.

Removal of motorboard and amplifier. Secure tone arm of pick-up to its rest arm by means of a piece of wire or string. Remove spring collar from retaining groove on turntable and carefully remove turntable.

Remove the eight roundhead wood screws along sides of motorboard. Gently ease up one edge of motorboard and then lift sufficiently clear of case to be able to unplug the lead to the loudspeaker situated on the left-hand side of case. Motorboard can now be removed.

Automatic stop mechanism. The pick-up, while travelling across the record, moves the operating lever O, which in turn makes lever L approach the main spindle. Striker S checks this movement by knocking lever L back at every revolution, until the run-off groove is reached, when the greater movement of lever L causes pawl P to drop off slide A. The next revolution of the striker actuates the stop by operating trigger T.

If the stop operates before the end of a record adjust screw R so that pawl P has a greater overlap.

Adjustment of stop. Load the stop by pulling the brake pad towards centre until trigger T snaps in. Turn striker S to the position shown in the diagram and place the lever L in contact with it.

Loosen the locking screw H, push the pawl P to the left with the left hand and adjust the slide A by means of its adjusting screw R so that the pawl P, when again released, rests on the edge of the slide and overlaps it by about 1/64 in., as shown in the drawing. Finally, tighten the locking screw H.