

BSR AMPLIGRAM AG 4 and AG 40

Four-valve, plus rectifier, portable gramophone and amplifier for 200-250V 50 c/s. Fitted with magnetic pick-up and AC induction turntable with auto-stop. Push-pull output stage delivers 10 watts to externally connected speakers. Provision for using either moving-coil or crystal microphones. Housed in attractive red-crackle finished metal carrying case. Weight complete 34 lb. Made by Birmingham Sound Reproducers, Ltd., Old Hill, Staffordshire.

CIRCUIT consists of a high-gain triode V1, feeding into a double-triode V2, which in turn drives the push-pull beam tetrode output valves V3 and V4. HT is provided by a full-wave indirectly heated rectifier V5.

Input to grid of V1 consists of two separate channels switched by means of S1.

PU Channel. A high-resistance magnetic pick-

up is connected through series resistor R1 to load resistor R2 and thence through S1 to grid V1.

Microphone Channel. Provision is made for the use of either a crystal type or low-impedance (15 to 40 ohms) microphone. Crystal microphone is plugged into socket J1, which connects it, through S1, to grid V1. When plug is inserted into J1 a pair of contacts is opened to disconnect the secondary L2 of moving-coil microphone matching transformer IP1, from across the grid circuit V1. Moving-coil microphone is plugged into J2, which connects it across primary L1 of IP1, the input matching transformer, and thence via contacts on J1 and S1 to grid V1.

V1 is operated as a high-gain amplifier. Cathode bias is obtained from R4 and decoupled by C9. The diodes are not used and are both strapped to the cathode. R5 is the anode load resistor. C2 feeds signal to R8, the volume control, and thence to grid of V2A. R7, C4 provide variable tone control at this stage.

Cathode of V2A is returned, through tertiary L5 of speaker output transformer, to cathode of V2B home to chassis through bias resistor R16. This introduces negative feedback voltages to cathode of V2A to reduce harmonic distortion.

R9 is anode load of V2A and has capacitor C3 shunted across it.

C7 applies signal at anode V1 to grid V3, one of the push-pull output valves, and also to potential divider network R14, R15, and thence to grid V2B. V2B is used as a phase inverter to drive the second push-pull output valve V4. R16 is cathode bias resistor and R10 anode load. C6 feeds signal to grid V4.

R17 is grid resistor of V4 and is shunted by capacitor C8. R14, R15 form the grid resistor of V3. R13 and R18 are grid stoppers. Cathode bias for V3, V4 is derived from R19 and C11.

Anode voltages for V3, V4 are obtained through centre-tapped primary L3 of push-pull output



BSR Ampligram AG 4 and AG 40

matching transformer OP1. Secondary L4 is tapped for 15-ohm and 7½-ohm speakers. L5 is used to provide negative feed-back voltage.

High tension is supplied by a full-wave indirectly heated rectifier V5. L8 supplies its anode voltages and L7 its heater voltage. L6, C12, C13 provide smoothing for HT line.

RESISTORS

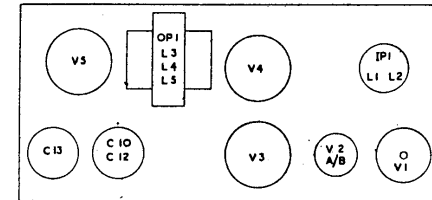
R	Ohms	
1	22K	½ W
2	3.3K	½ W
3	1 Meg	½ W
4	2.2K	½ W
5	220K	½ W
6	47K	½ W
7	500 K	Potentiometer (with Switch)
8	250 K	Potentiometer
9	22K	½ W
10	22K	½ W
11	2.2K	½ W
12	2.2K	½ W
13	10K	½ W
14	220K	½ W
15	220K	½ W
16	680	½ W
17	220K	½ W
18	10K	½ W
19	270	2 W

INDUCTORS

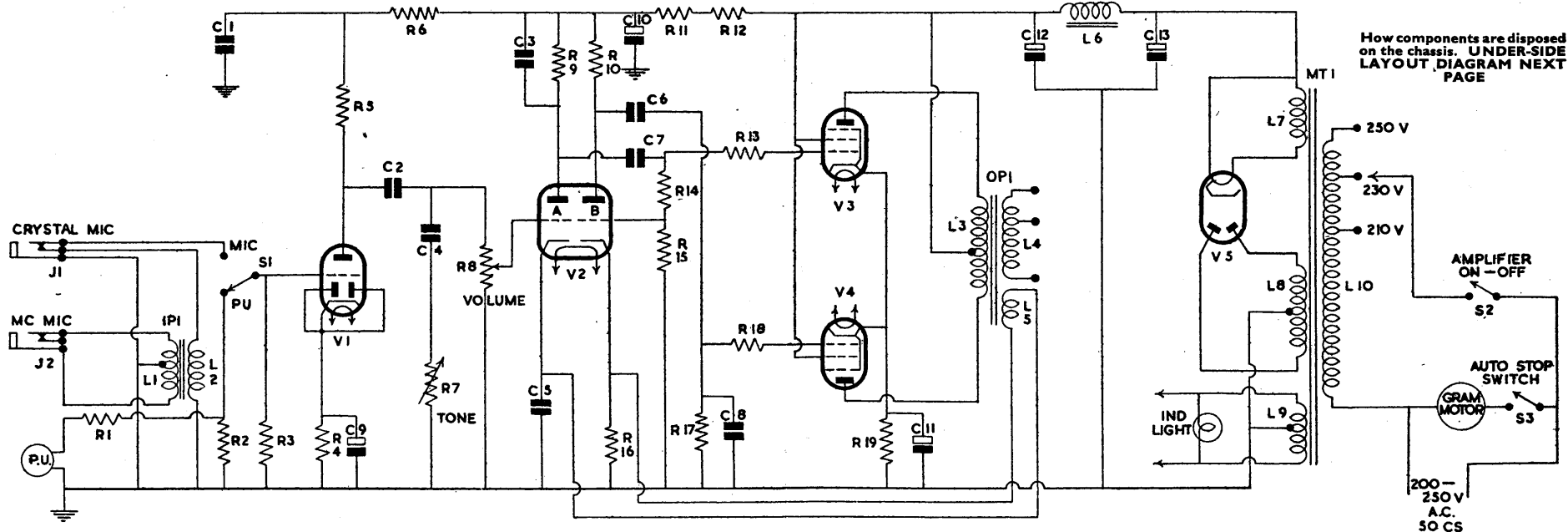
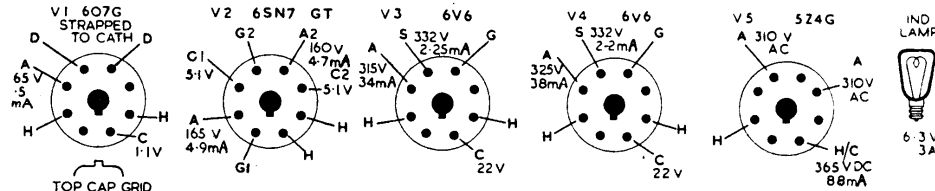
L	Ohms	
1	2500	
2	600	
3	1.5	
4	.6	
5	350	
6	Very low	
7	250	
8	Very low	
9	29	
10	2500	
PU	2500	

CAPACITORS

C	Mfids	
1	.5 Tubular	350 v
2	.1 Tubular	350 v
3	.001 Mica	
4	.002 Mica	
5	.001 Mica	
6	.1 Tubular	500 v
7	.1 Tubular	500 v
8	.0003 Mica	
9	25 Electrolytic	25 v
10	8 Electrolytic	500 v
11	25 Electrolytic	50 v
12	8 Electrolytic	500 v
13	16 Electrolytic	500 v



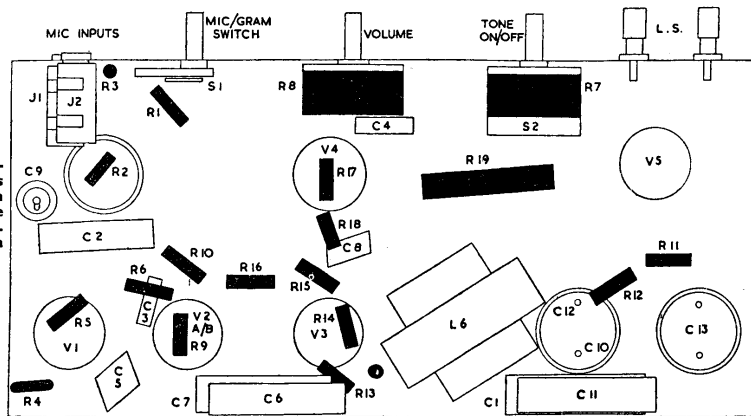
Notes.—Model AG 4 uses a Garrard pick-up and motor type AC6. Model AG 40 uses a Collaro pick-up and motor type AC37. Both motors are adjusted for 200/250V mains.



How components are disposed on the chassis. UNDER-SIDE LAYOUT DIAGRAM NEXT PAGE

BSR AMPLI- GRAM

This drawing identifies components mounted beneath the chassis of the BSR Ampligram. Other details on previous page



PIFCO

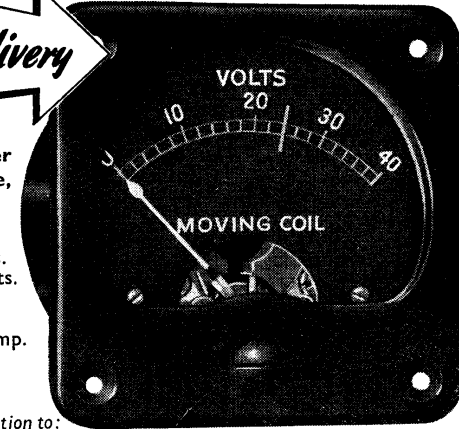
METERS at PRICES BELOW
PRESENT DAY COST

Immediate delivery

Panel-mounting moving-coil meter illustrated is in Black Bakelite case, $2\frac{1}{4} \times 1\frac{1}{2}$ " 0-40 volts.

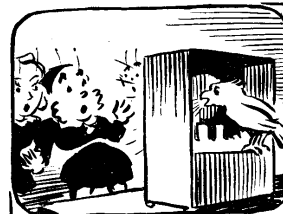
Also available are :

- Voltmeter $2\frac{1}{4} \times 1\frac{1}{2}$ " 0-20 Volts.
- Voltmeter $2\frac{1}{8} \times 1\frac{1}{2}$ " 0-600 Volts.
- Milliammeter $3 \times 1\frac{1}{4}$ " 0-50 M.A.
- Milliammeter $1\frac{1}{2} \times 1\frac{3}{8}$ " 0-75 M.A.
- Ammeter $2\frac{1}{4} \times 1\frac{7}{8}$ " 50-0-50 Amp.
- Oil Pressure Gauge $2\frac{1}{4} \times 2\frac{1}{2}$ " 0-160 lbs.



Illustrated folder and trade prices on application to:

PIFCO LTD. · PIFCO HOUSE · WATLING ST. · MANCHESTER, 4



"What's wrong with our wireless to-night?"
"I'm sure we fixed it all right, Yes, it's squeaking and bleating and keeps on repeating."
"Now twerps—go and fetch the FLUXITE."

For all **SOLDERING** work you need **FLUXITE**—the paste flux—with which even dirty metals are soldered and "tinned." For the jointing of lead—without solder and the "running" of white metal bearings—without "tinning" the bearing. It is suitable for **ALL METALS**—excepting *Aluminium*—and can be used with safety on *Electrical* and other sensitive apparatus. **With FLUXITE, joints can be "wiped" successfully that are impossible by any other method.**
OF ALL IRONMONGERS, in tins—10d., 1/6 & 3/-
Used for over 40 years in Government works and by leading Engineers and Manufacturers.
"The **FLUXITE GUN**" puts Fluxite where you want it by a simple pressure. Price 1/6 or filled 2/6.

FLUXITE

SIMPLIFIES ALL SOLDERING

Write for Leaflets on Case-Hardening Steel and Tempering Tools with **FLUXITE**, also on "wiped" joints. Price 1d. each.
FLUXITE LTD., (Dept. T.E.), Bermondsey St., London, S.E.1.

STURDY FOR REWINDS

For all-round satisfaction, send your rewinds to Sturdy. First-class work, returned in the shortest possible time, and fully guaranteed. For the trade only.

STURDY ELECTRIC CO., LTD.
DIPTON, NEWCASTLE-ON-TYNE
Phone: DIPTON 221. Lists on application.