



# PHILCO



## Service Bulletin No. 68

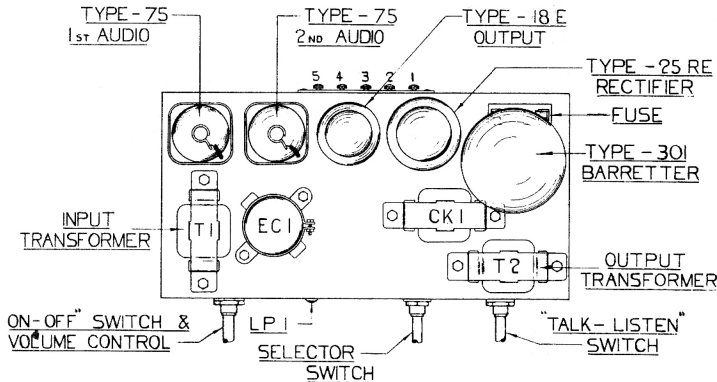
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**TYPE CIRCUIT:** Four-valve Amplifier for inter-communication between a Master Unit and one, two, three or four Remote Units. Excellent performance can be obtained with line lengths up to 1,000 feet. A very low line hum level is assured by the use of the Philco system of cathode injection.

**POWER SUPPLY:** The Master Unit circuit is so arranged that connection may be made to either A.C. or D.C. mains from 190 to 260 volts without discrimination or adjustment, and on A.C. mains the circuit is independent of periodicity between the limits of 40-100 cycles. A type 25RE rectifying valve is employed in the unit and is used as a half-wave rectifier on A.C. and as a resistance on D.C.

**POWER CONSUMPTION:** Approx. 45 watts.

### Philcophone Model U-407



TOP CHASSIS DIAGRAM.

TABLE 1—VOLTAGES.

Valve socket readings to chassis taken with an 065 PHILCO SET TESTER, using the 250 and 10 volts ranges. Volume Control at minimum and Selector Switch in position marked "ALL." A.C. line, 230 volts, 50 cycles.

POSITION.	VALVE.	ANODE.	SCREEN.	BIAS.
1st L.F. Amplifier, S.1 .. ..	75	Pin 3. 40 v.	—	Pin 6. 0.25 v.
2nd L.F. Amplifier, S.2 .. ..	75	Pin 3. 110 v.	—	Pin 6. 0.8 v.
Pentode Output, S.3 .. ..	18E	Pin 3. 230 v.	Pin 4. 240 v.	Pin 6. 17.5 v.
Half-Wave Rectifier, S.4 .. ..	25RE	Pins 3 and 6. 230 v. A.C. Pins 4 and 5. 250 v. D.C.	—	—
Barretter, B.1 .. ..	301	Pin 1. 58 v. A.C. Pin 2. 230 v. A.C.	—	—

L.P.1. V.1 and 2 filaments, each 6.3 volts A.C.; V.3 filament, 14 volts A.C.; V.4 filament, 25 volts A.C., measured between Pins 1 and 2 on each socket.

TABLE 2 — RESISTANCES OF COILS.

(Selector Switch to be in position marked "Quiet.")

REF. NO.	TEST PROD 1	TEST PROD 2	RESISTANCE (OHMS)	REF. NO.	TEST PROD 1	TEST PROD 2	RESISTANCE (OHMS)
T.1 Primary ..	SW.2/7	SW.4/5	0.2	CK.1 .. ..	V.3/4	SW.3/1	400
T.1 Secondary	V.1/6	—	450	L.S. (MIC.) ..	Lead 1	Lead 2	2*
T.2 Primary ..	V.3/3	V.3/4	450	Remote Unit	Lead 1	Lead 2	2
T.2 Secondary	SW.2/7	SW.4/3	0.2*				

\* Resistance of T.2 Secondary alone and L.S. (Mic.) alone, taken when disconnected.

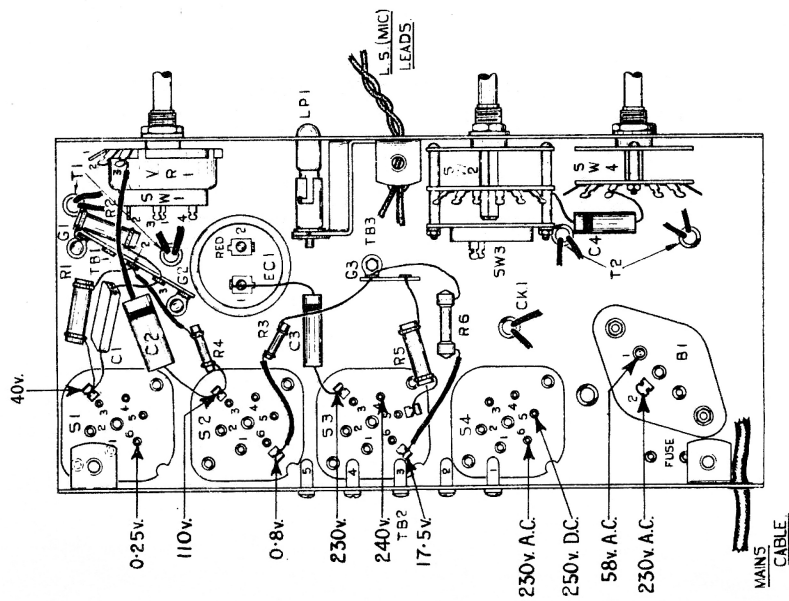
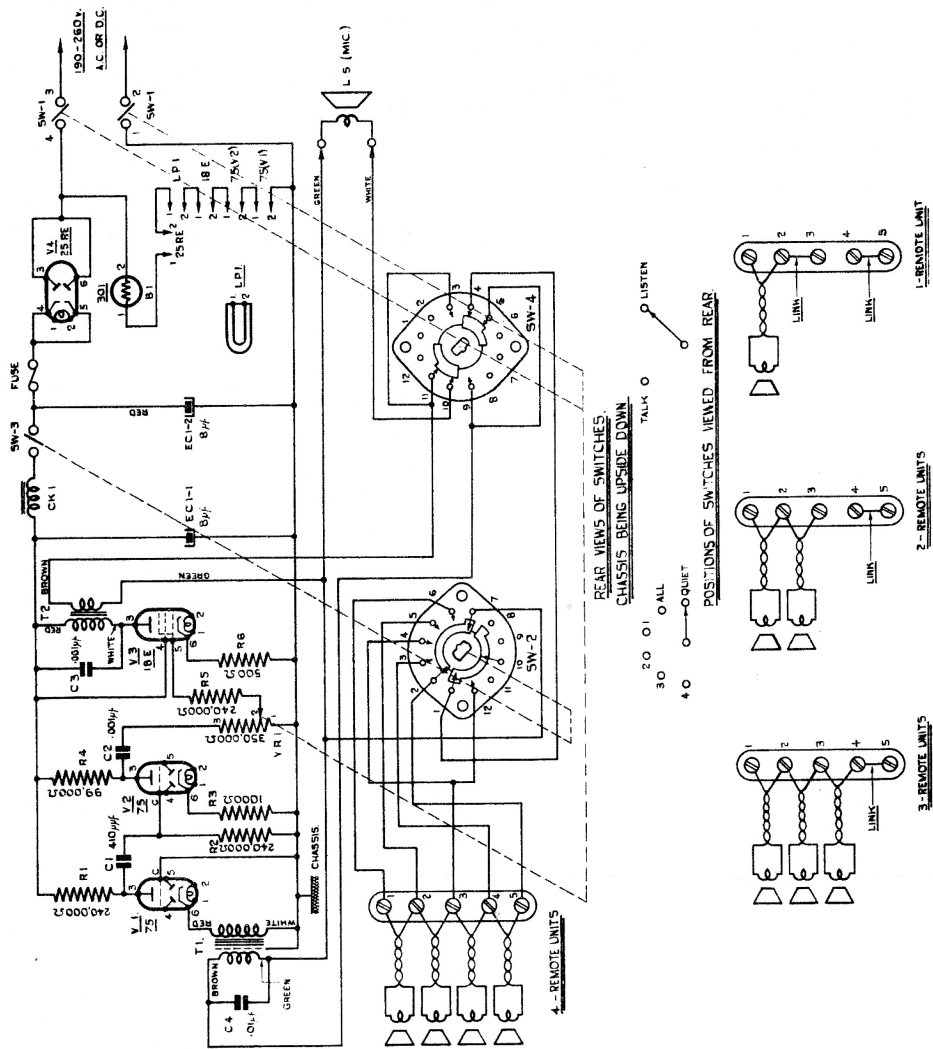
NOTE: Reference numbers for valves should be read in conjunction with the socket numbers, e.g., V.1-S.1.

TABLE 3 — PARTS AND PRICE LIST.

REF. NO.	DESCRIPTION.	PART NUMBER.	LIST PRICE. s. d.	REF. NO.	DESCRIPTION.	PART NUMBER.	LIST PRICE. s. d.
T.1 ..	Input Transformer .. .. .	320-8021	—	S.3 ..	6-prong Valve Holder .. .. .	27-6036	5
T.2 ..	Output Transformer .. .. .	320-8037	—	S.4 ..	6-prong Valve Holder .. .. .	27-6036	5
CK.1 ..	L.F. Choke .. .. .	320-8022 or 32-7668	—	B.1 ..	Barretter Socket Assembly .. .. .	380-5199	1 6
EC.1 ..	Electrolytic Condenser, 8+8 mfd. ..	30-2028	4 6		Fuse Panel Assembly .. .. .	380-5449	2
C.1 ..	Mica Condenser, 410 mmfd. .. .	300-1011	8		Fuse (250 milliamps.) <b>Special</b> ..	<b>380-5506</b>	1 2
C.2 ..	Tubular Condenser, .001 mfd. .. .	30-4201	6		Pilot Lamp Bracket Assembly .. .	380-5427	9
C.3 ..	Tubular Condenser, .001 mfd. .. .	30-4201	6		Pilot Lamp .. .. .	34-2141	1 4
C.4 ..	Tubular Condenser, .01 mfd. .. .	30-4124	6		Mans Cable .. .. .	LO-1009	1 6
R.1 ..	1/2 watt Carbon Resistor, 240,000 ohms	4410	9		L.S. (Mic.) Cable .. .. .	LO-1038	7
R.2 ..	1/2 watt Carbon Resistor, 240,000 ohms	4410	9		Valve Shield .. .. .	28-2726	2
R.3 ..	1/2 watt Carbon Resistor, 1,000 ohms ..	33-1028	9		Grid Clip .. .. .	28-2214	doz. 5
R.4 ..	1/2 watt Carbon Resistor, 99,000 ohms	6099	9		Spares Envelope Kit .. .. .	400-8013	1 0
R.5 ..	1/2 watt Carbon Resistor, 240,000 ohms	4410	9		Knob, Grubscrew & Spring Assembly	270-4161	4
R.6 ..	1/2 watt Carbon Resistor, 500 ohms ..	330-1002	9		Pilot Lamp Window .. .. .	380-5446	5
VR.1 ..	Volume Control, 350,000 ohms .. .	—	—	V.1 ..	L.S. (Mic.) .. .. .	360-1115†	16 6
SW.1 ..	On/Off Switch .. .. .	330-5018	—	V.2 ..	Type 75 Double Diode Triode Valve..	8002	12 6
SW.2 ..	Selector Switch .. .. .	—	—	V.3 ..	Type 75 Double Diode Triode Valve..	8002	12 6
SW.3 ..	"Quiet" Switch .. .. .	42-1302	4 0	V.4 ..	Type 18E Pentode Output Valve .. .	7209E	13 6
SW.4 ..	"Talk-Listen" Switch .. .. .	42-1319	2 9	V.4 ..	Type 25RE Rectifier Valve .. .. .	34-2035	10 6
S.1 ..	6-prong Valve Holder .. .. .	27-6036	5	B.1 ..	Type 301 Barretter .. .. .	340-9000	8 6
S.2 ..	6-prong Valve Holder .. .. .	27-6036	5		Type Y1 Remote Unit (including Part No. 360-1115†)	—	—

† When ordering Speaker-Microphone parts, the letter which will be found in the part number must also be given.

ABOVE PRICES DO NOT APPLY IN I.F.S.



UNDER CHASSIS DIAGRAM — PHILCOPHONE MODEL U-407.

SCHEMATIC DIAGRAM — PHILCOPHONE MODEL U-407.