



PHILCO



Radio Service Bulletin No. 61

Published by the Philco Radio & Television Corporation of Great Britain, Ltd., Perivale, Greenford, Middlesex

Model A-527 "The People's Set De Luxe"

TYPE CIRCUIT: Five-valve Superheterodyne Receiver with Pentode Output (3 watts) for operation on Medium and Long Wavebands. Full delayed A.V.C. is incorporated in the circuit, and provision is made for connecting an external speaker of the Permanent Magnet Moving Coil type having an impedance of 2-3 ohms.

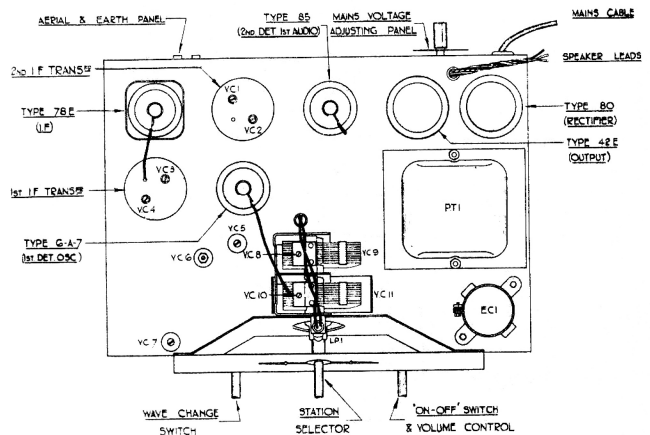
POWER SUPPLY: Alternating current mains of 200-230 volts, or 231-260 volts, 50-100 cycles, when the voltage adjusting plug is fully screwed into the correct socket on the rear-of-cabinet panel.

WAVEBANDS: COVERAGE: Two: (a) Long, 300-150 Kilocycles (1,000-2,000 metres); (b) Medium, 1,510-550 Kilocycles (198.6-545.4 metres).

TUNING DRIVE: Geared 6-1 ratio for smooth and accurate tuning.

INTERMEDIATE FREQUENCY: 451 Kc.

POWER CONSUMPTION: 45 watts approx.



TOP CHASSIS DIAGRAM.

TABLE 1 - VOLTAGES.

Valve socket readings to chassis taken with an 065 or 077 Philco Set Tester, using the 500, 250 and 10 volt ranges. Volume control at minimum, wave - change switch in M.W. position, and no aerial connected. A.C. line 220 volts, 50 cycles.

POSITION	VALVE	ANODE	SCREEN	BIAS
1st Detector and Oscillator, S.2	6A7	Pin 3. 265 v. Pin 5. 200 v.*	Pin 4. 80 v.	—
I.F. Amplifier, S.1	78E	Pin 3. 265 v.	Pin 4. 80 v.	Pin 5. —2 v.
2nd Detector, A.V.C. and 1st Audio, S.3	85	Pin 3. 25 v.	—	—
Pentode Output, S.4	42E	Pin 3. 250 v.	Pin 4. 265 v.	—15 v.
Full Wave Rectifier, S.5	80	Pin 3. 320 v. A.C. Pin 4. 320 v. A.C.	—	—

* Oscillator Anode Volts.

† Bias measured between TB.4/1 and Chassis.

Total D.C. 350 volts measured between V.5/2 and TB.4/1.

V.1, 2, 3, 4 and LP.1 filaments, each 6.3 volts A.C.; V.5 filament, 5 volts A.C., measured between pins 1 and 2 on each socket.

TABLE 2 - RESISTANCES OF COILS.

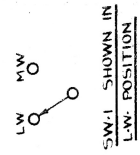
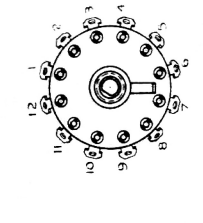
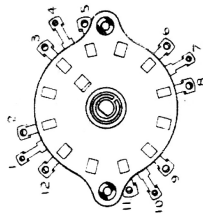
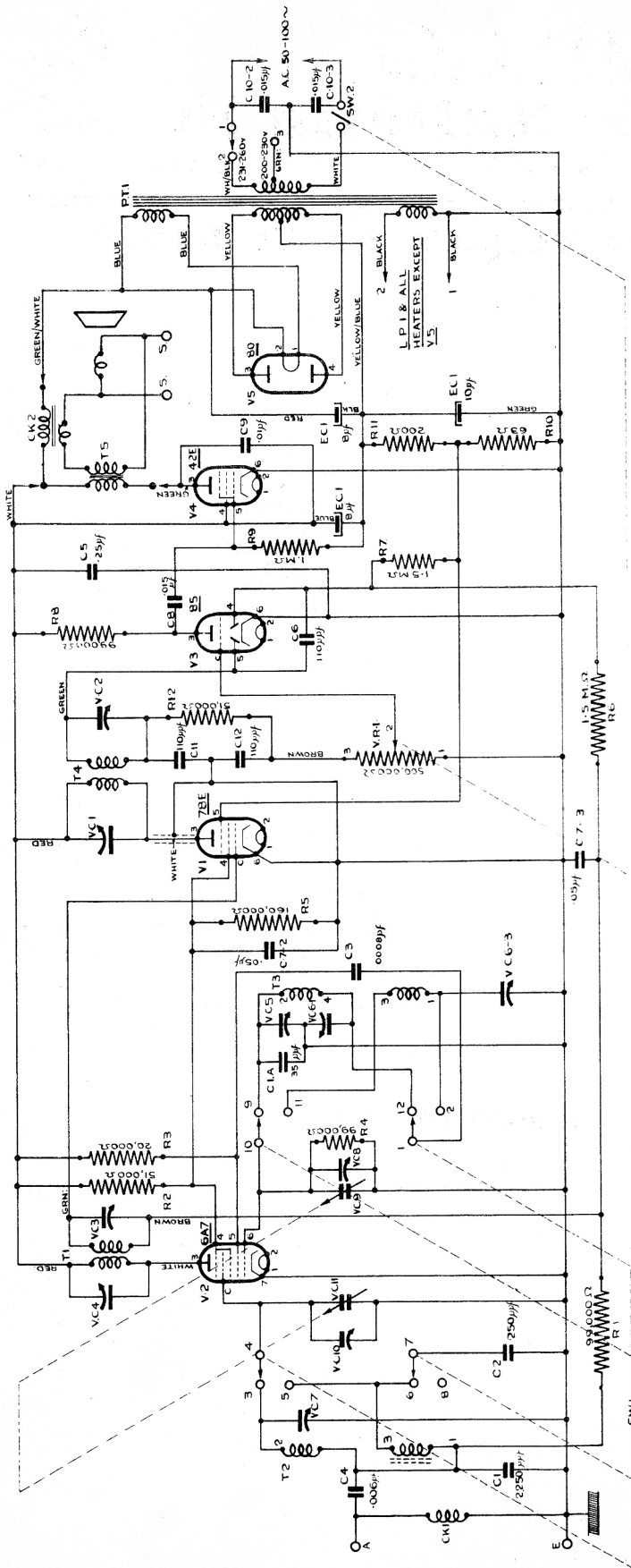
REF. NO.	TEST PROD 1	TEST PROD 2	RESISTANCE (Ohms)	REF. NO.	TEST PROD 1	TEST PROD 2	RESISTANCE (Ohms)
CK.1 ..	TB.1 Socket "A"	TB.1 Socket "E"	75 or 25 **	T.5 Secondary	Output Transfmr.	Output Transfmr.	0.2*
T.2 ..	V.2 Cap	TB.3/2	SW.1. L.W. 25 " M.W. 2.5	Speech Coil	Lead 1	Lead 2	2*
T.1 Primary	V.2/3	TB.2/2	8	PT.1 Primary	C.10/3	200-230 v. tap	SW.2. ON 17.5
T.1 Secondary	V.1 Cap	TB.3/1	12	" "	C.10/3	231-260 v. tap	" ON 20 " OFF Infinity
T.3 ..	V.2/6	SW.1/1	SW.1 L.W. 16.5 " M.W. 2.5	H.T. Secondary	V.5/3 V.5/4	TB.4/1 TB.4/1	240 240
T.4 Primary	V.1/3	TB.2/2	12	Heater L.T. Secondary	V.4/2	Chassis	0.2†
T.4 Secondary	V.3/5	VR.1/3	51,000 approx.	Rectifier L.T. Secondary	V.5/1	V.5/2	0.1†
T.5 Primary	V.4/3	V.4/4	240				

* Resistance of T.5 Secondary alone and Speech Coil alone (taken when disconnected).

** See foot of Page 4.

† Resistance of L.T. windings taken with all valves removed.

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

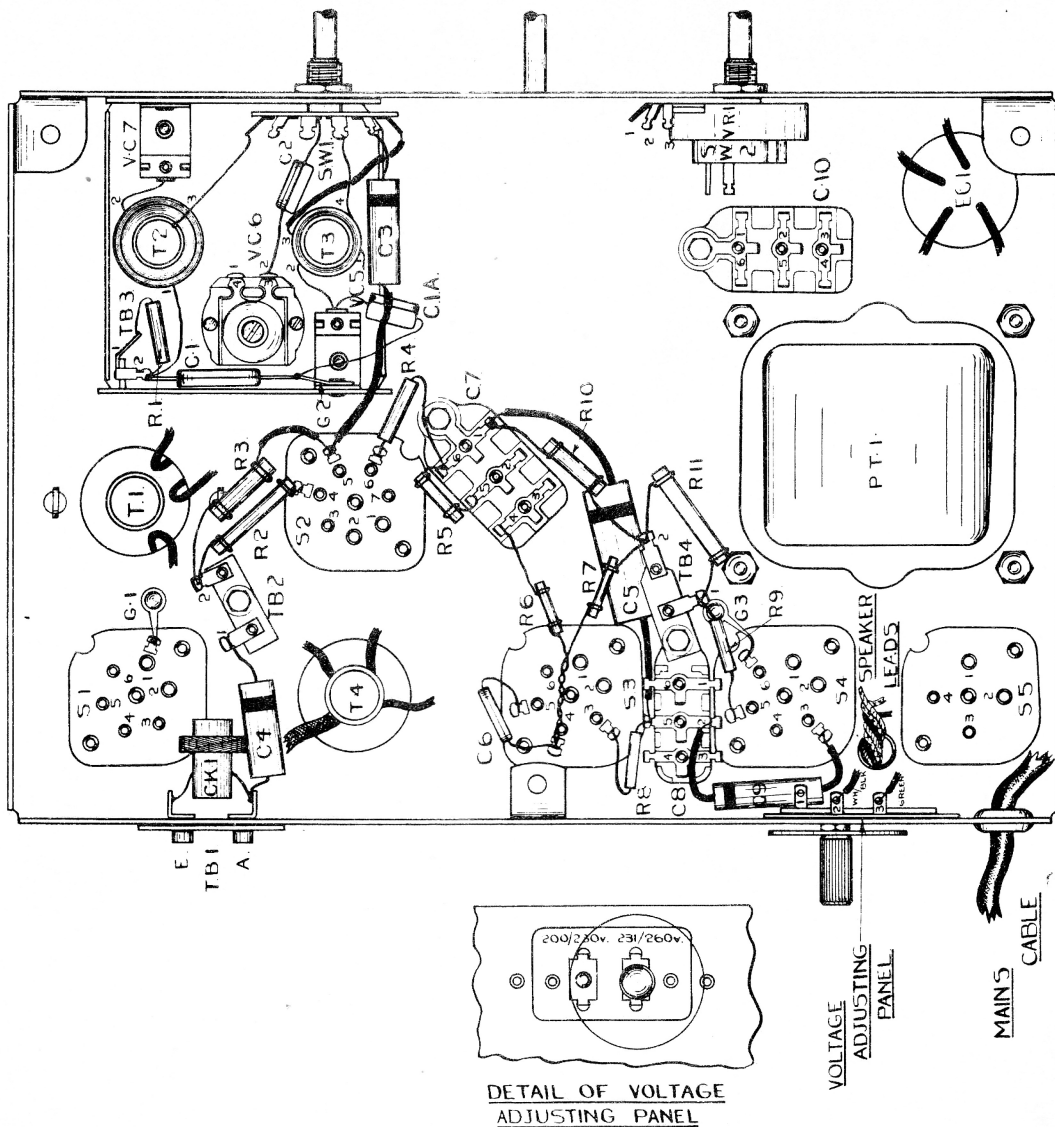


ALTERNATIVE - TYPE SW-1
PART NO. 420-101-E

SW-1 - PART NO. 42-116-A
ALTERNATIVE TYPE - PART NO. 42-132-I
IS IDENTICAL EXCEPT THAT CONTACT
NO. 8 IS REMOVED

VIEWS OF SW-1 FROM FRONT
CHAS-515 BEING UPSIDE DOWN

SCHEMATIC DIAGRAM MODEL A-527.



MODEL A-527.
UNDER CHASSIS DIAGRAM.

ALIGNMENT PROCEDURE.

Before leaving the Factory, all Philco Receivers are accurately aligned, but if misalignment is suspected through damage, it should not be attempted without instruction in the correct adjustment of the trimming and padding condensers. It should only be carried out with the aid of an accurately calibrated Signal Generator, and for this purpose the PHILCO ALL-PURPOSE SET TESTER MODEL 077 is recommended.

Connect the Output Meter across the Primary of the Output Transformer, *i.e.*, green and white leads. With gang condenser fully open, check that top of pointer is vertical in centre of space between the L.W. and M.W. scales. Turn wave-change switch clockwise (M.W. position) and volume control fully clockwise.

INTERMEDIATE FREQUENCY: The I.F. trimmers (VC's 1, 2, 3, and 4) should first be carefully adjusted by feeding in a 451 Kc. signal from the Signal Generator via a Standard Dummy to the grid cap of the 6A7 valve (with grid lead connected) and the Signal Generator earthed to the Receiver chassis. Adjust the Signal Generator attenuator to give a half-scale reading on the Output Meter. The I.F. trimmers must then be adjusted for maximum output with a fibre screwdriver.

Transfer Signal Generator lead via the Standard Dummy to the Aerial Socket.

MEDIUM WAVES: Set pointer at 1,400 Kc. on scale; feed in a signal of 1,400 Kc. and trim VC's 8 and 10 in that order for maximum output.

Feed in and tune a signal of 600 Kc. Rock gang and pad VC.6 (screw) for maximum output. Readjust VC.8 at 1,400 Kc. Repeat the above operation until no further improvement results.

LONG WAVES: Turn wave-change switch anti-clockwise (L.W. position) and set gang at 290 Kc. Feed in a 290 Kc. signal and trim VC's 5 and 7 in that order for maximum output.

Feed in and tune a 160 Kc. signal. Rock gang and pad VC.6 (nut) for maximum output. Readjust VC.5 at 290 Kc. Repeat the above operation until no further improvement results.

Check calibration.

PARTS AND PRICE LIST—MODEL A-527.

REF. NO.	DESCRIPTION	PART NO.	LIST PRICE s. d.	REF. NO.	DESCRIPTION	PART NO.	LIST PRICE s. d.
CK.1	Aerial Choke	320-1190*	6	R.7	½ watt Carbon Resistor, 1.5 megohms	33-1188	9
T.1 VC.3 VC.4	} 1st I.F. Transformer and Trimmers Assembly	32-2101 or	7 6	R.8	½ watt Insulated Resistor, 99,000 ohms	330-2012	9
		320-1125	—	R.9	½ watt Insulated Resistor, 1 megohm	330-2018	9
T.2	M. & L.W. Aerial Coil	32-2528 or 320-1153	3 3	R.10	½ watt Insulated Resistor, 63 ohms	330-2044	9
T.3	M. & L.W. Oscillator Coil . . .	32-2531 or 320-1183	2 6	R.11	1 watt Carbon Resistor, 200 ohms	330-1033	9
T.4 VC.1 VC.2	} 2nd I.F. Transformer and Trimmers Assembly	32-2503 or	7 6	SW.1	Wave-change switch	42-1164 or 42-1321 or 420-1013	2 2 2 3 2 3
C.11		Mica Condenser, 110 mmfd. . .	320-1126 or	7 6	VR.1	Volume Control, 500,000 ohms . .	} 33-5208
C.12	Mica Condenser, 110 mmfd. . .	320-1155	7 6	SW.2	On/Off Switch		
R.12	½ watt Insulated Resistor, 51,000 ohms			S.1	6-prong Valve Holder	27-6036	5
T.5	Output Transformer, Part No. 320-7026	} 360-1106† Complete Speaker	15 9	S.2	7-prong Valve Holder	27-6037	5
CK.2	Field Coil				S.3	6-prong Valve Holder	27-6036
VC.5	Single Padder, 30-110 mmfd. . .	31-6181 or 310-6045	6	S.4	6-prong Valve Holder	27-6036	5
VC.6	Double Padder, 130 + 400 mmfd. .	31-6180	1 4	S.5	4-prong Valve Holder	27-6044 or 270-6010	4
VC.7	Single Padder, 30-110 mmfd. . .	31-6181 or 310-6045	6	PT.1	Power Transformer, 50-100 cycles Power Transformer, 40-100 cycles (Special)	32-7823 320-8019	18 0 —
VC.8 VC.9 VC.10 VC.11	} Two-gang Condenser and Trimmers	31-2012	12 0	LP.1	Pilot Bulb	34-2064 or 34-2141	1 4 1 4
EC.1		Electrolytic Condenser, 8+8+10 mfd.	30-2196	9 0		Valve Shield	28-2726
C.1	Mica Condenser, 2,250 mmfd. . .	30-1055 or 300-1021	1 2 1 3		Grid Clip	28-2214	doz. 5
C1A	Mica Condenser, 30 mmfd. . .	300-1024	9		Rubber Bush	4126	1
C.2	Mica Condenser, 250 mmfd. . .	30-1032 or 300-1041	— 6		Mains Cable	LO-1009	1 7
C.3	Tubular Condenser, .0008 mfd. . .	30-4335	6		Speaker Cable	LO-1004	10
C.4	Tubular Condenser, .006 mfd. . .	30-4125	6		Mains Voltage Adjusting Panel	380-5342	1 6
C.5	Tubular Condenser, .25 mfd. . .	30-4134	1 2		Mains Voltage Adjusting Plug . .	380-5340	1 0
C.6	Mica Condenser, 110 mmfd. . .	30-1031 or 300-1040	— 6		Scale Holder and Spring Assy. . .	380-5370	1 3
C.7	Moulded Condenser, .05+.05 mfd.	3615-D.G.	1 2		Dial Scale	270-5075*	1 7
C.8	Moulded Condenser, .015 mfd. . .	3793-S.U.	8		Pointer and Hub Assembly	380-5371	8
C.9	Tubular Condenser, .01 mfd. . .	30-4145	7		Chassis Mounting Rubbers	270-7244	1
C.10	Moulded Condenser, .015+.015 mfd.	3793-D.G.	8		Chassis Mounting Washers (Rubber)	270-7429	1
R.1	½ watt Insulated Resistor, 99,000 ohms	330-2012	9		Chassis Mounting Bolts	W-1345A	1
R.2	1 watt Carbon Resistor, 51,000 ohms	4237	9	V.1	Celluloid Window	270-5046	1 3
R.3	½ watt Insulated Resistor, 20,000 ohms	330-2049	9	V.2	Tuning Knob and Spring	270-4041	9
R.4	½ watt Insulated Resistor, 99,000 ohms	330-2012	9	V.3	Volume Knob and Spring	270-4011	3
R.5	½ watt Carbon Resistor, 160,000 ohms	33-1191	9	V.4	Wave-change Knob and Spring	270-4011	3
R.6	½ watt Carbon Resistor, 1.5 megohms	33-1188	9	V.5	Knob Spring	280-5262	doz. 2
					Red Wander Plug	380-5087	2
					Black Wander Plug	380-5015	doz. 1 6
					Type 78E Variable-mu H.F. Pentode Valve	8315-E	12 6
					Type 6A7 Variable-mu Heptode Valve	34-2002	15 0
					Type 85 Double Diode Triode Valve	7532	12 0
					Type 42E Pentode Output Valve	6447-E	13 6
					Type 80 Full Wave Rectifier Valve	3149	8 0

* In later models, CK.1 is Part No. 320-1191 and the Dial Scale is Part No. 270-5075A. These parts are not interchangeable.
 †NOTE.—When ordering Speaker parts, the letter which will be found in the part number of the Speaker must also be given.
 Above prices are not applicable in I.F.S.