PHILCO

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"THE PEOPLE'S SET"

Model 444

TYPE CIRCUIT: Four valve superheterodyne for Medium and Long wave-bands, with highly selective iron dust-core coils, full A.V.C. and Pentode Output (3 watts).

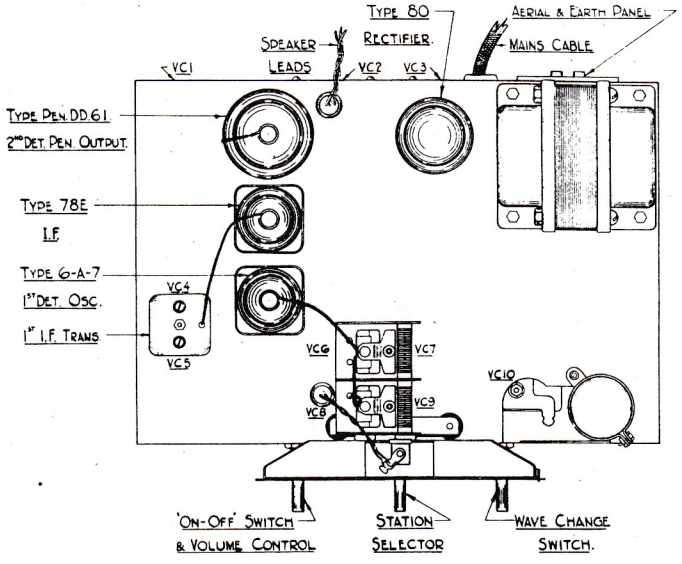
POWER SUPPLY: Alternating current mains of 200-260 volts, 40-100 cycles, when the correct transformer tapping is employed. Two tappings are provided: green covering 200-230 volts and white/black covering 231-260 volts respectively.

WAVE-BANDS: COVERAGE: Two (a) Medium, 500-1500 Kc. (600-200 metres); (b) Long, 150-300 Kc. (2000-1000 metres).

TUNING DRIVE: Geared 5-1 ratio for smooth and accurate tuning.

INTERMEDIATE FREQUENCY: 451 Kc.

POWER CONSUMPTION: 40 watts.



TOP CHASSIS DIAGRAM

TABLE 1. VOLTAGES.

A.C. Line 245 volt 50 cycles.

Valve socket readings to chassis taken with an 065 or 077 Philco Set Tester on the 250 and 10 volt ranges. Volume control at minimum, wave-change switch in M.W. position, and no aerial connected.

POSITION	VALVE	ANODE	SCREEN	CONTROL GRID	CATHODE
1st Detector and Oscillator S.3.	6.A7	Pin 3. 250 volts Pin 5. 200 volts*	Pin 4 100 volts		Pin 7 6.5 volts
I.F. Amplifier S.2.	78E	Pin 3. 250 volts	Pin 4 100 volts		Pin 6 6.5 volts
2nd Det. A.V.C. and Pentode Output S.1.	PEN.DD. 61	Pin 6. 245 volts	Pin 4 250 volts	Pin 5 Pin 7 -0.1 volts†	Pin 3 5.5 volts
Full-Wave Rectifier S.4.	80	Pin 3. 350v. A.C. Pin 4. 350v. A.C.	-		

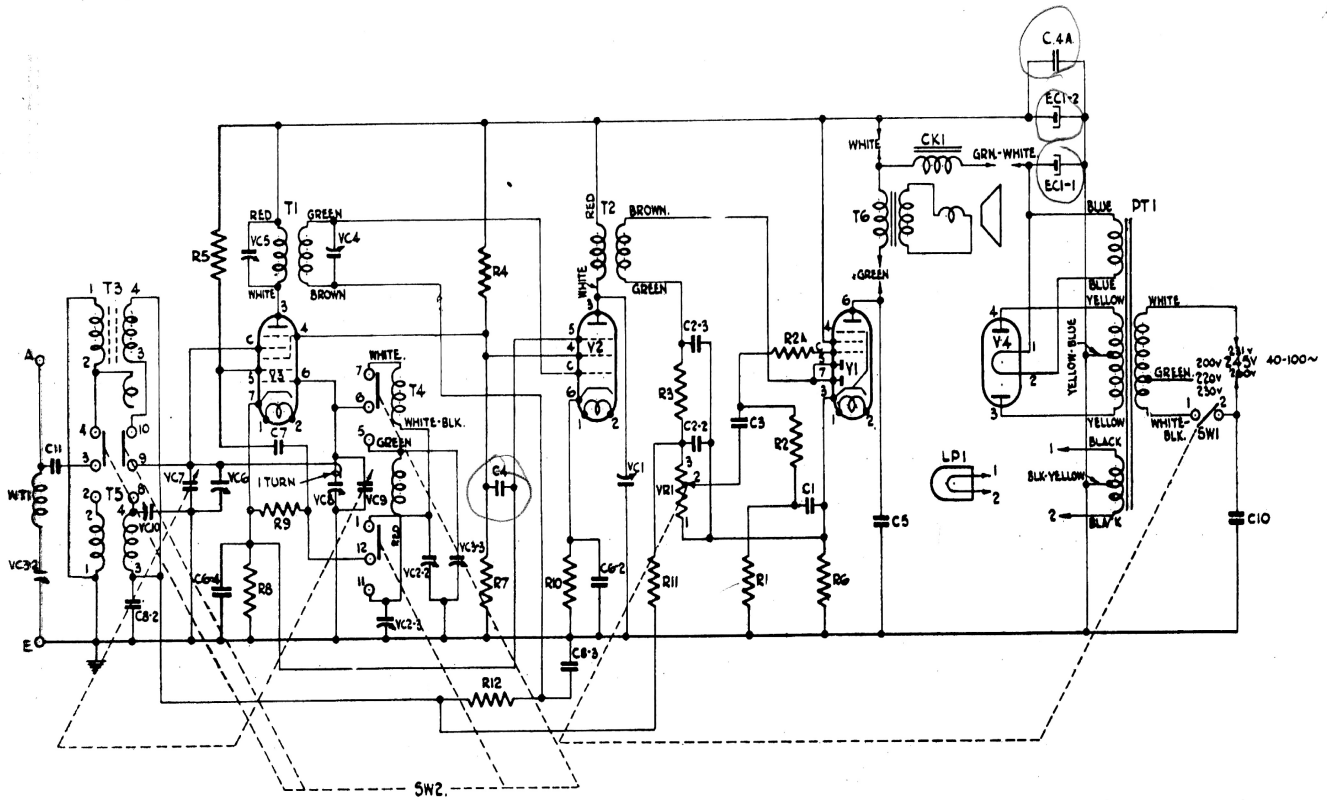
* Oscillator Anode volts. † Diodes volts. Total D.C. 360 volts measured between EC1/2 and Chassis.
Rectifier filament volts 5 A.C. measured between pins 1 and 2 on S.4.
S.1, S.2 and S.3 filament volts 6.3 A.C. measured between pins 1 and 2 on S.1.

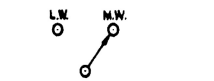
TABLE 2. RESISTANCES OF COILS.

REF. NO.	TEST PROD 1	TEST PROD 2	RESIST. (OHMS)
WT1 ...	A	VC3/2	20
T3 Prim. ...	TB4/1	Chassis	SW2 M.W. 25
T5 Prim. ...	TB4/1	Chassis	SW2 L.W. 120
T3 Sec. ...	V3 Cap	C8/2	SW2 M.W. 2.5
T5 Sec. ...	V3 Cap	C8/2	SW2 L.W. 40
T1 Prim ...	V3/3	TB2/2	8
T1 Sec. ...	V2 Cap	C8/3	12
T4 ...	V3/6	TB3/1	SW2 M.W. 2.5 SW2 L.W. 17
T2 Prim. ...	V2/3	TB2/2	30
T2 Sec. ...	V1/5	C2/3	80

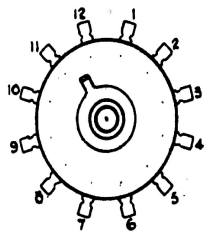
REF. NO.	TEST PROD 1	TEST PROD 2	RESIST. (OHMS)
P.T.1 Prim. ... P.T.1 Prim. ...	White White	Wh/Blk 245v. Green 220v.	35 approx. 30 approx.
H.T. Sec. ... H.T. Sec. ...	V4/3 V4/4	Chassis Chassis	240 approx. 240 approx.
Rectifier L.T.	V4/1	V4/2	0.1*
Heaters ...	V3/1	V3/2	0.2*
CK1 ...	EC1/1	EC1/2	2000 approx.
T6 Prim. ...	V1/6	EC1/1	230 approx.
T6 Sec. ...	Outp't Trfmr.	Outp't Trfmr.	0.2†
Speech Coil ...	Lead 1	Lead 2	2†

* Resistance of L.T. windings taken with all valves removed.
† Resistance of T6 secondary alone and speech coil alone (taken when disconnected).
NOTE: Reference numbers for valves should be read in conjunction with the socket numbers, *e.g.*, V1.—S1.





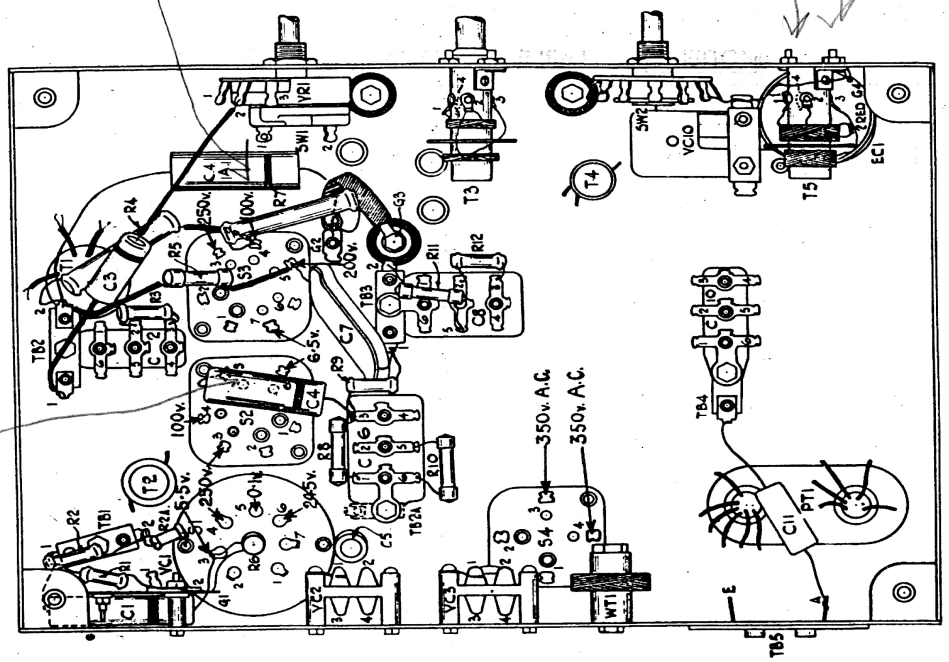
S.W.2 SHOWN IN M.W. POSITION.



FRONT VIEW OF S.W.2.

CHASSIS BEING UPSIDE DOWN.

MODEL 444. CIRCUIT DIAGRAM.



MODEL 444. 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 closed, check that pointer reads on index line. Set wave-change switch to M.W. (clockwise rotation), turn gang open to fullest extent and Volume Control to maximum.

INTERMEDIATE FREQUENCY: The I.F. trimmers (VC.'s 1, 4 and 5) should first be carefully adjusted by feeding in a 451 Kc. signal from the Signal Generator to the Grid cap of the 6A7 valve (with grid lead disconnected) 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.

NOTE: It is necessary to carry out this operation several times taking particular care with VC.1: unless this is done, the I.F. will peak at the wrong place.

WAVE-TRAP: Transfer Signal Generator lead via a Standard Dummy to the Aerial socket and replace grid lead of the 6A7 valve. Feed in a 451 Kc. signal and adjust VC.3 (screw) for *minimum* output.

MEDIUM WAVES: Set gang condenser at 1400 Kc. Feed in a signal of 1400 Kc. and trim VC.'s 8 and 6 in that order for maximum output.

Feed in and tune a 600 Kc. signal. Rock gang and pad VC.2 (screw) for maximum output. Readjust trimming at 1400 Kc. and padding at 600 Kc. until no further improvement results.

LONG WAVES: Turn wave change switch to L.W. (counter clockwise rotation). Set gang condenser at 290 Kc. Feed in a signal of 290 Kc. and trim VC3 (nut) and VC10 in that order, for maximum output.

Feed in and tune a 160 Kc. signal. Rock gang and pad VC2 (nut) for maximum output. Readjust VC3 (nut) and VC10 at 290 Kc. and VC2 (nut) at 160 Kc. until no further gain can be obtained.

Check calibration.

MODEL 444. TABLE 3. PARTS AND PRICE LIST.

Ref. No.	Description.	Part No	List Price s. d
T.1 } VC.4 } VC.5	1st I.F. Transformer Assembly	320-1047	5 6
T.2	2nd I.F. Transformer	32-2130	5 6
T.3	M.W. Aerial Transformer	320-1044	3 0
T.4	Oscillator Coil	32-2094	4 6
T.5	L.W. Aerial Transformer	320-1045	4 0
T.6	Output Transformer, Speech Coil and Cone (Speaker Complete)	360-1030	18 0
CK.1	Field Coil	38-6851	1 0
WT.1	I.F. Trap Coil	310-6013	1 0
VC.1	Single Padder 15-80 mmfd.	31-6099	2 3
VC.2	Double Padder 240+500 mmfd.	31-6098	2 0
VC.3	Double Padder 50+125 mmfd.		
VC.6 } VC.7 } VC.8 } VC.9	Two-gang Condenser and Trimmers	31-1566	11 6
VC.10	Single Padder 15-80 mmfd.	310-6013	1 0
EC.1	Electrolytic Condenser 8+8 mfd.	30-2028	6 0
C.1	Tubular Condenser 0.1 mfd.	30-4122	6
C.2	Moulded Condenser 110+110 mmfd.	8035 D.U.	1 0
C.3	Tubular Condenser .01 mfd.	30-4124	6
C.4	Tubular Condenser .05 mfd.	30-4020	7
C.4A.	Tubular Condenser, .1 mfd.	30-4170	9
C.5	Tubular Condenser .003 mfd.	30-4042	7
C.6	Moulded Condenser .09+.09 mfd.	4989 D.G.	1 3
C.7	Mica Condenser 800 mmfd.	300-1005	8
C.8	Moulded Condenser .05+.05 mfd.	3615 D.G.	1 2
C.10	Moulded Condenser .015 mfd.	3793 S.G.	8
C.11	Mica Condenser 250 mmfd.	300-1014	6
R.1	¼ watt Carbon Resistor. 490,000 ohms.	6097	9
R.2	¼ watt Carbon Resistor. 490,000 ohms.	6097	9
R2A	¼ watt Carbon Resistor, 100,000 ohms.	33-1047	9
R.3	¼ watt Carbon Resistor. 51,000 ohms.	609d	9
R.4	1 watt Carbon Resistor. 25,000 ohms.	3656	9
R.5	¼ watt Carbon Resistor. 10,000 ohms.	33-1000	9
R.6	Wire-wound Resistor, 140 ohms.	330-3003	9
R.7	1 watt Carbon Resistor 51,000 ohms.	4237	9
R.8	½ watt Carbon Resistor 700 ohms.	330-1008	9
R.9	¼ watt Carbon Resistor. 51,000 ohms.	6098	9
R.10	½ watt Carbon Resistor. 800 ohms. (±5%)	330-1009	9
R.11	¼ watt Carbon Resistor 2 Megohms	33-1025	9
R.12	¼ watt Carbon Resistor 2 Megohms.	33-1025	
VR.1	Volume Control 330,000 ohms.	330-5004	3 6
SW.1	On-Off Switch	42-1164	2 2
SW.2	Wave-Change Switch		
P.T.1	Mains Transformer. 200-260v.	320-7007	17 0
	40-100 cycles	270-6007	5
S.1	7-Prong Socket, English type	27-6036	5
S.2	6-Prong Socket	27-6037	5
S.3	7-Prong Socket	27-6034	4
S.4	4-Prong Socket	270-7022	5
	Erinoid Screw for WT1	28-2726	2
	Valve Shield	270-5045	1 6
	Dial Scale	270-5046	1 3
	Dial Scale Shield	380-5125	9
	Pointer and Hub Assembly	6608	1 4
	Pilot Bulb	28-2214	5 doz.
	Grid Clip	4126	1
	Rubber Bush	5189	1
	Rubber Buffers		
V.1	Type Pen. D.D. 61 Double Diode Pentode Valve	340-2000	16 0
V.2	Type 78E. Variable-mu. H.F. Pentode Valve	8315E	12 6
V.3	Type 6A7 Variable-mu. Heptode Valve	34-2002E	15 0
V.4	Type 80 Full Wave Rectifier Valve	3149	8 0
	Mains Lead and Plug	LO-1009	1 7
	3-Way Speaker Cable	LO-1004	10
	Large Tuning Knob and Spring	270-4054	9
	"Volume" Knob and Spring	270-4055	5
	"Wave-change" Knob and Spring	270-4056	5
	Knob Spring	280-5262	2 doz.
	Red Wander Plug	380-5087	2
	Black Wander Plug	380-5015	1 6 doz.
	Dial Screen		6
	Reflector Assembly		1 2