



PHILCO



Radio Service Bulletin No. 36^A

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

Model 1282 X.—Radiogram

TYPE CIRCUIT.—The Model 1282X is a five-valve All-Wave Superheterodyne Radiogram with Pentode Output—5 watts—designed for operation on Long, Medium and Short Wave Bands. Built-in connections are supplied for Philco All-wave Aerial—aerial selector built into and operated by the wave-band switch. Shadow-meter tuning and built-in connections for separate speaker are further refinements.

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

WAVE-BANDS, COVERAGE.—Three: Long, 150-320 Kc. (2,000-937 metres); Medium, 530-1,500 Kc. (566-200 metres); Short, 5.7-18 Kc. (52.6-16.7 metres).

TUNING DRIVE.—Two-speed gear drive—ratios 10 : 1 and 50 : 1 for slow and accurate tuning.

tone CONTROL.—Continuously variable, enabling a fine degree of tone between mellow and brilliant to be obtained.

INTERMEDIATE FREQUENCY.—451 Kc.

AUTOMATIC VOLUME CONTROL.—Full A.V.C. is obtained by feeding back the D.C. voltage developed across the Diode load (after filtering free of the L.F. signal and H.F. currents) into the signal input grids of the 6A7 and 78E valves.

GRAMOPHONE.—Operation of the gramophone is controlled by extreme right-hand rotation of the wave-band switch, which makes change over from radio to gramophone without the possibility of radio break through.

CONTROLS.—All controls are on the motor board.

REMOVAL OF CHASSIS.—This is easily effected, by loosening the bracket nuts inside the cabinet, allowing the

chassis to be lowered and lifted out after the knobs have been removed.

SPEAKER.—A full size (11 in.) speaker is used. This speaker embodies the latest principles in acoustic development and provides high fidelity over a wide band of Audio-frequencies.

The top chassis diagram and alignment procedure are the same as for the Model 282.

The under chassis diagram is the same as for the Model 282 with the exception that a terminal panel (TB.1a) and 10,000 ohms $\frac{1}{2}$ -watt resistor (R.2a) are added to C2, wire-wound resistances 30 ohms and 12 ohms (R.14a and R.14b) respectively are inserted between R.14, tag 4, and R.15, and the voltages on the valves differ, as set out in the table below. Also, EC.2 has two tags which are connected in parallel. On the under chassis diagram, the readings of 69-volt and 2.9-volt are shown at pins 5 and 6 respectively on S.3. They should be at pins 4 and 5 respectively.

On the circuit diagram for the 282 Model, given in Radio Service Bulletin No. 36, the slight modifications for the Model 1282X are the addition of gramophone motor connections across the primary of the mains transformer, the insertion of R.2a in the black lead from the shadowmeter, and the insertion of R.14a and R.14b in that order between R.14, tag 4, and earth line. The white lead is removed from R.14, tag 2, and taken to the joint of R.14, tag 4 and R.14a. The green lead is removed from R.14, tag 3, and taken to the joint of R.14a and R.14b.

Erratum.—The electrolytic condenser shown just below EC.1 on the circuit diagram should be EC.1 and not EC.2. The bottom end of R.15 should be connected to the earth side of EC.3 and not to R.14, tag 1, side as shown on the circuit diagram.

TABLE 1. VOLTAGES.

A.C. Line. 245 volts, 50 cycles.

Valve socket readings to chassis, taken on an 025 or 099 Philco Set Tester, using the 300, 30 and 10-volt ranges. Volume

Control at minimum, wave-band switch in M.W. position, no aerial connected and tone control at fully brilliant position.

Position.	Valve.	Anode.	Screen.	Bias.
1st Detector and Oscillator, S.4	6A7	Pin 3. 210 volts. Pin 5. 100 volts.*	Pin 4. 80 volts.	Pin 5. —2 volts.
I.F. Amplifier, S.3	78E	Pin 3. 240 volts.	Pin 4. 80 volts.	Pin 5. —2 volts.
2nd Detector, A.V.C. and 1st L.F. Amplifier, S.1	78	Pin 3. 170 volts.	—	—
Pentode Output, S.2	42E	Pin 3. 300 volts.	Pin 4. 310 volts.	—20 volts.†
Full Wave Rectifier, S.5	80	Pin 5. 390 v. A.C. Pin 4. 390 v. A.C.	—	—

* Oscillator Anode Volts.

† Bias Volts measured across R.14.

Total D.C., 400 volts.

TABLE 2. COIL RESISTANCES.

Same as for Model 282. An error occurs in one item: "L.S. Field. EC.2/1" should read "L.S. Field, EC.1/1."

TABLE 3. PARTS LIST.

Same as for Model 282, except as follows:—

Delete.

Ref. No.	Description.	Part No.	Price.
EC.2	Electrolytic Condenser, 16 mfd.	30-2118	5/-
PT.	Mains Transformer, 200-260 volts, 40-100 cycles	320-7007	17/-
R.11	1-watt Carbon Resistance, 10,000 ohms	5324	9d.
T.6	Output Transformer } Speech Coil } Field Coil } Speaker complete	360-1010	20/3

Add.

Ref. No.	Description.	Part No.	Price.
EC.2	Electrolytic Condenser, 8+8 mfd.	30-2028	6/-
PT.	Mains Transformer, 200-260 volts, 40-100 cycles	320-7020	18/-
R.11	1-watt Carbon Resistance, 15,000 ohms	5718	9d.
R.14a	Wire-wound Resistance, 30 ohms	330-3004	9d.
R.14b	Wire-wound Resistance, 12 ohms	330-3005	9d.
T.6	Output Transformer } Speech Coil } Field Coil } Speaker complete	360-1018	25/6
R.2a	1-watt Carbon Resistance, 10,000 ohms	4412	9d.
	Type AC.7 Motor, Turntable and 2,000 ohms Pick-up Assembly	350-2002	62/6
	Rubber Chassis Bush	270-7019	—
	Motor Cable	LO 1020	1/1
	Pick-up Cable	LO 1017	1/9
	Separate Speaker Cable	LO 1014	1/7
	Aerial and Earth Cable	LO 1007	1/7
	Knob " Volume " and Spring	270-4023	3d.
	Knob " Wavechange " and Spring	270-4024	3d.
	Knob " Tone Control " and Spring	270-4025	3d.
	Needle Cup	290-1040	6d.
	Needle Cup Cover	290-1039	3d.

MODEL 1282X.
TABLE 3. PARTS AND PRICE LIST.

Ref. No.	Description.	Part No.	Price.	Ref. No.	Description.	Part No.	Price.			
T.4	Aerial Coil Assembly ...	32-1980	5/-	R.6	1/4-watt Carbon Resistance, 190,000 ohms ...	33-1116	9d.			
T.3	Oscillator Coil Assembly ...	32-1893	8/7	R.7	1/4-watt Carbon Resistance, 51,000 ohms ...	6098	9d.			
VC.8				R.8	1/4-watt Carbon Resistance, 490,000 ohms ...	6097	9d.			
VC.9				R.9	1/4-watt Carbon Resistance, 490,000 ohms ...	6097	9d.			
VC.11				R.10	1/4-watt Carbon Resistance, 490,000 ohms ...	6097	9d.			
VC.12				R.11	1-watt Carbon Resistance, 15,000 ohms ...	5718	9d.			
T.2	1st I.F. Coil Assembly ...	32-1705	5/4	R.12	1-watt Carbon Resistance, 25,000 ohms ...	3656	9d.			
VC.6				R.13	1/4-watt Carbon Resistance, 32,000 ohms ...	5279	9d.			
VC.7	2nd I.F. Coil Assembly ...	32-1706	5/3	R.14	Candohm Wire Wound Resistance, 225+25+25 ohms ...	33-3234	11d.			
T.1				R.15	1/4-watt Carbon Resistance, 51,000 ohms ...	4518	9d.			
VC.4	I.F. Trap Coil ...	38-6851	1/-	VR.1	Volume Control, 350,000 ohms	33-5140	3/9			
WT.1	Trap Coil (Image Rejector) ...	320-1028	6d.	SW.1	On-Off Switch					
VC.10	Twin Gang Condenser ...	31-1679	11/8	SW.21	Wavechange Switch, 4-way	42-1148	6/9			
VC.13				VR.2				Tone Control Resistor, 125,000 ohms ...	330-5001	3/3
VC.1	Twin Padding Condenser, 1,500 plus 600 mmfd. ...	31-6027	2/11	T.6				Output Transformer } Speaker	360-1018	25/6
VC.2	Twin Padding Condenser, 235 plus 50 mmfd. ...	31-6074	2/-	PT.				Mains Transformer, 200-260 volts, 40-100 cycles ...		
VC.3	Quadruple Padding Condenser ...	31-6047	2/3	SM.	Shadow Meter ...	320-7020	18/-			
C.1	Mica Condenser, 110 mmfd. ...	300-1012	5d.	S.1	6-prong Valve Holder ...	450-2001 P	6/6			
C.2	Moulded Condenser, .015 mfd. ...	3793 SU.	8d.	S.2	6-prong Valve Holder ...	27-6036	5d.			
C.3	Tubular Condenser, .1 mfd. ...	30-4170	9d.	S.3	6-prong Valve Holder ...	27-6036	5d.			
C.4	Moulded Condenser, .00011 mfd. ...	8035 DG.	1/-	S.4	7-prong Valve Holder ...	27-6037	5d.			
C.5	Tubular Condenser, .25 mfd. ...	30-4146	10d.	S.5	4-prong Valve Holder ...	27-6034	4d.			
C.6	Mica Condenser, 2,250 mmfd. ...	300-1021	1/3		Valve Shield ...	28-2726	2d.			
C.7	Mica Condenser, 110 mmfd. ...	300-1012	5d.		Scale ...	270-5023	1/3			
C.8	Mica Condenser, 1,000 mmfd. ...	300-1016	10d.		Pilot Bulb ...	34-2064	1/4			
C.9	Mica Condenser, 250 mmfd. ...	300-1019	8d.		Grip Clip ...	28-2214	5d.			
C.10	Tubular Condenser, .25 mfd. ...	30-4134	1/2		Escutcheon Complete ...	400-5007	2/7			
C.11	Moulded Condenser, .015 mfd. ...	3793 SG.	8d.		Chassis Mounting Rubbers ...	5189	1d.			
C.12	Moulded Condenser, .15 mfd. ...	6287 DG.	1/7		Large Brown Knob ...	270-4035	8d.			
C.13	Tubular Condenser, .05 mfd. ...	30-4020	7d.		Small Brown Knob ...	270-4036	5d.			
C.14	Mica Condenser, 70 mmfd. ...	300-1022	6d.		Knob Spring ...	280-5262	2d dz.			
C.15	Mica Condenser, 50 mmfd. ...	300-1003	4d.	V.1	Type 75, Double Diode Triode Valve ...	3092	14/-			
C.16	Moulded Condenser, .015 mfd. ...	3793 SU.	8d.	V.2	Type 42E, Pentode Output Valve ...	6447	14/-			
C.17	Moulded Condenser, .015 mfd. ...	3793 SG.	8d.	V.3	Type 78E, Variable-Mu H.F. Pentode Valve ...	3315 E.	13/-			
EC.1	Electrolytic Condenser, 8+8 mfd. ...	30-2146	6/9	V.4	Type 6A7, Variable-Mu Hep-tode Valve ...	34-2002 E.	16/-			
EC.2	Electrolytic Condenser, 8+8 mfd. ...	30-2028	6/-	V.5	Type 80, Full Wave Rectifier Valve ...	3148	8/-			
EC.3	Electrolytic Condenser, 12 mfd. ...	30-2002	1/11		Separate Speaker Cable ...	LO 1011	1/7			
R.1	1/4-watt Carbon Resistance, 1 megohm ...	33-1096	9d.		Aerial and Earth Cable ...	LO 1037	1/7			
R.2	1/4-watt Carbon Resistance, 1 megohm ...	33-1096	9d.		Knob "Volume" and Spring ...	270-4023	5d.			
R.3	1/4-watt Carbon Resistance, 1 megohm ...	33-1096	9d.		Knob "Wavechange" and Spring ...	270-4024	5d.			
R.4	1/4-watt Carbon Resistance, 51,000 ohms ...	6098	9d.		Knob "Tone Control" and Spring ...	270-4025	5d.			
R.14a	Wire-wound Resistance, 30 ohms ...	330-3004	9d.		Needle Cup ...	290-1040	6d.			
R.14b	Wire-wound Resistance, 12 ohms ...	330-3005	9d.		Needle Cup Cover ...	290-1039	3d.			
R.2a	1/4-watt Carbon Resistance, 10,000 ohms ...	4412	9d.							
	Type AC.7 Motor, Turntable and 2,000 ohms, Pick-up Assembly ...	350-2002	62/6							
	Motor Cable ...	LO 1020	1/1							
	Pick-up Cable ...	LO 1017	1/9							
R.5	1/4-watt Carbon Resistance, 51,000 ohms ...	6098	9d.							

SERVICE BULLETIN NO. 36. MODEL 282.

Errata.—The following part numbers should read as follows:—

T.4.	Aerial Coil Assembly ...	32-1980.	C.3.	Tubular Condenser, .1 mfd. ...	30-4170
WT.2.	Trap Coil (Image Rejector) ...	320-1028.	C.9.	Mica Condenser, 250 mmfd. ...	300-1019
VC.1.	Twin Padding Condenser, 1,500+600 mmfd. ...	31-6027.		Bezel Assembly ...	400-5007
VC.2.	Twin Padding Condenser, 235+50 mmfd. ...	31-6074.		Large Brown Knob ...	270-4035
VC.3.	Quadruple Padding Condenser ...	31-6047.		Small Brown Knob ...	270-4036