PHILCO

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MODEL 1281. BABY GRAND.

TYPE CIRCUIT: Five valve superheterodyne with Shadow meter tuning and pentode output (3 watts). Provision is made for connecting a separate speaker and pickup if desired.

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 200-220 volts and white-black covering 221-260 volts respectively.

VALVES USED: 1 type 6A7, 1st detector and oscillator; 1 type 78E, I.F.; 1 type 75, 2nd detector, A.V.C. and 1st L.F.; 1 type 42E, output; 1 type 80, full wave rectifier.

WAVE-BANDS COVERAGE: Two; (*a*) medium, 540-1,500 Kc. (560-200 metres); (*b*) long, 150-330 Kc. (2,000-910 metres).

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

TONE CONTROL: Two positions giving brilliant or mellow reproduction.

INTERMEDIATE FREQUENCY: 125 Kc.

POWER CONSUMPTION: 60 watts.

MODEL 1281. CONCERT GRAND.

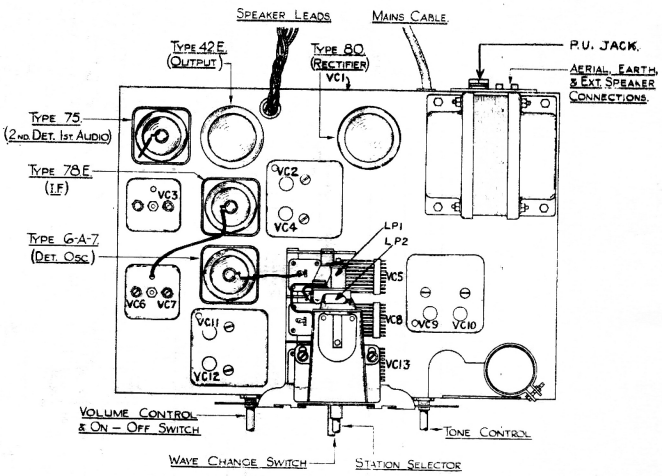


TABLE 1. VOLTAGES.

A.C. line—230 volts 50 cycles.

Valve socket readings to chassis taken with an 025 or 099 Philco Set Tester on the 300, 30 and 10 volt ranges. Volume control at minimum, no aerial connected, tone control at brilliant.

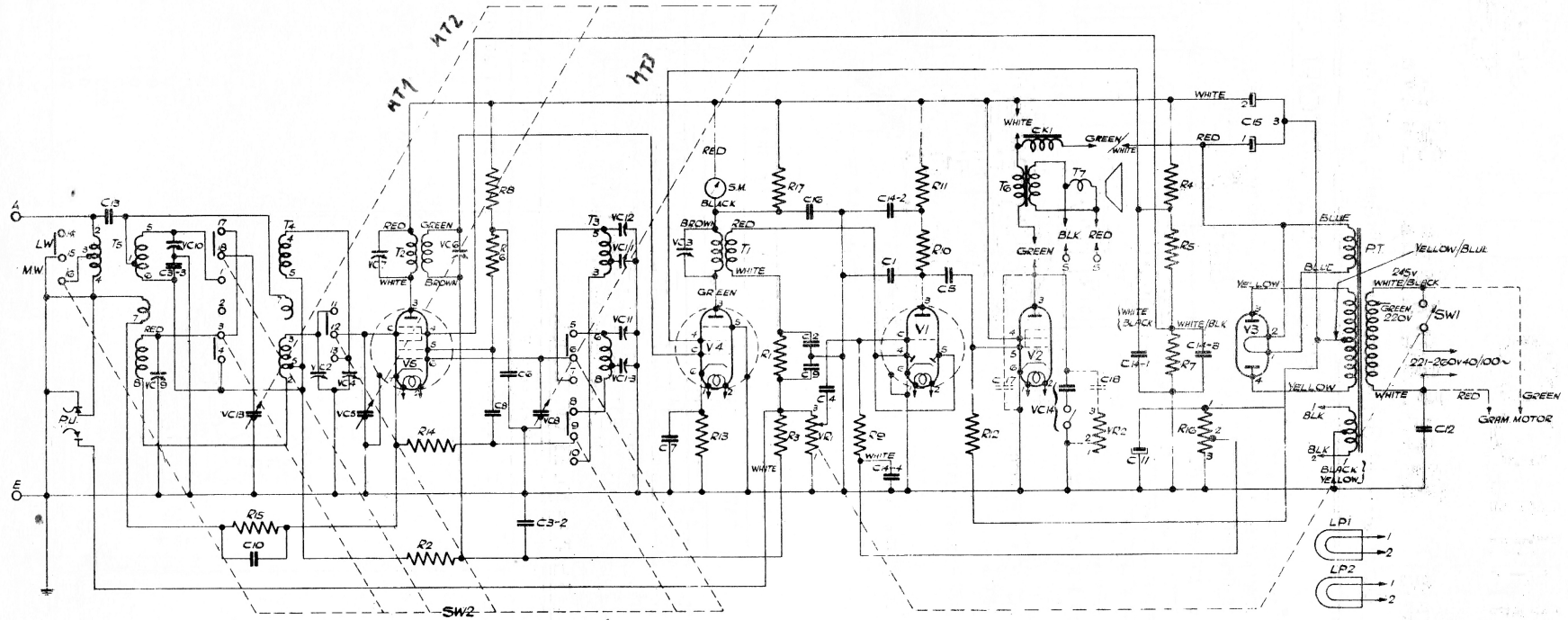
Valve	Anode	Screen	Control Grid	Cathode
6A7	245 180*	45	—	2
78E	230	—	—	2.2
75	110	—	0.2 0.2†	—
42E	240	245	—0.2 —15‡	—

* Osc. Anode. † Diodes. ‡ Measured cross R.16.
P.T. volts. H.T. sec. 310 v. 0-310 v. A.C. Rectified H.T. 305 v
D.C. measured between R.16/1 and C.15 1

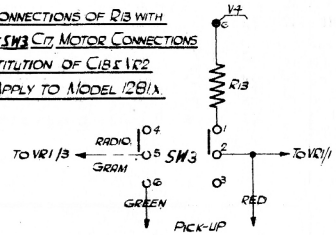
TABLE 2. RESISTANCES OF COILS.

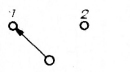
Ref. No.	Test Prod 1	Test Prod 2	Resistance (Ohms)
T 5	Aerial socket	Earth Socket	SW.2 at M.W 40
			,, L.W 100
	VC 13 or SW 2/18	C 3/3	,, M.W 5
			,, L.W 50
T 4	V 5 Cap	C 3/3	,, M.W 4.8
			,, L.W 48
T 3	VC 8 or V 5/6	C 8 and R 14 joint	,, M.W 10
		or SW 2/9	,, L.W 48
T 2 Primary	V 5/3	C 15/2	100
T 2 Secondary	V 4 Cap	C 3/2	100
T 1 Primary	V 4/3	TB 2A/1	100
T 1 Secondary	V 1/4	TB 1/1	100
S.M.	C 15/2	TB 1/1	2,500 approx.
P.T. Primary	White	White/black (245V.)	33
	,,	Green (220V.)	29
H.T. Secondary	C 15/3	V 3/3	220
,,	C 15/3	V 3/4	240
Rectifier L.T.	V 3/1	V 3/2	0.1*
Heaters	V 5/1	V 5/2	0.1*
CK.1	C 15/1	C 15/2	1,140
T 6 Primary	V 2/3	C 15/2	220
T 6 Secondary	Output transformer	Output transformer	0.4†
T 7	Speech coil lead	Speech coil lead	2.0†

* Resistance of L.T. windings taken with all valves removed.
† Resistance of T.6 secondary and speech coil taken when disconnected.

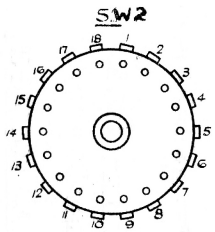


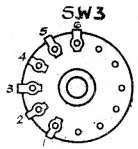
NOTE: REVISED CONNECTIONS OF R13 WITH ADDITION OF SW3 C17 MOTOR CONNECTIONS & THE SUBSTITUTION OF C18 & VR2 FOR VC14 APPLY TO MODEL 1281A ONLY





SWITCH SHEWN IN L.W. POSITION

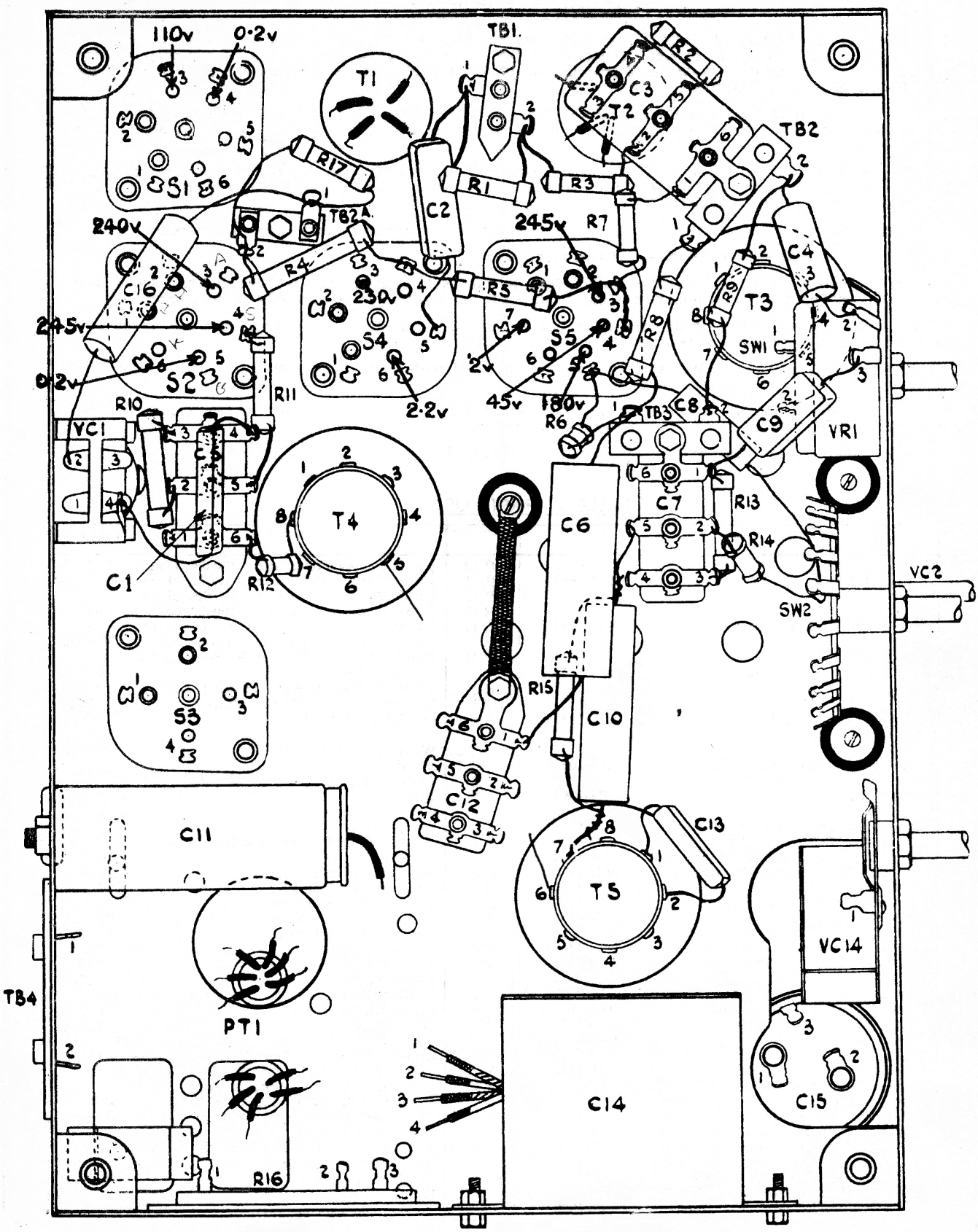




VIEWS OF SWITCHES S2 & S3 FROM FRONT CHASSIS BEING UPSIDE DOWN

Model 1281. SCHEMATIC DIAGRAM.

S.B.No.37.



UNDER CHASSIS DIAGRAM.

Model 1281.

ALIGNMENT PROCEDURE.

Before leaving the Factory all PHILCO receivers are accurately aligned, and no further alignment should be attempted without instruction in the correct adjustment of the compensating condensers. This 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 099, is recommended.

Connect the Output Meter across the Primary of the output transformer, *e.g.*, green and white leads. Set the wave-change switch to M.W. (clockwise position) and turn Gang Condenser to open position (above 1,500 Kc.). Volume Control at maximum.

The I.F. padders (VC.'s 7, 6 and 3) should first be adjusted by feeding in a 125 Kc. signal from the Signal Generator to the grid cap of the 6A7 valve (with grid lead disconnected). Adjust the Signal Generator attenuator to give a half scale reading on the Output Meter.

With gang open to fullest extent, check that tuning dial reads on index line (above 1,500 Kc. marking).

Transfer Signal Generator to Aerial and Earth terminals.

Feed in a 1,400 Kc. signal, and turn the Tuning Dial to 1,400 Kc. First adjust VC.12 for the *first* signal heard as the padder is screwed down from minimum (fully unscrewed), then adjust VC.10 and VC.4 in that order.

Feed in and tune a 600 Kc. signal, rock gang and adjust VC.1 (nut) until no further gain can be obtained. Recheck at 1,400 Kc. and 600 Kc. and readjust if necessary.

Turn wave-change switch to L.W. (anti-clockwise position) and feed in and tune a 290 Kc. signal. Adjust VC.'s 11, 2 and 9 in that order for maximum output

Feed in and tune a 160 Kc. signal, rock gang and adjust VC.1 (screw) until no further gain can be obtained. Recheck at 290 Kc. and 160 Kc., as before, and check calibration.

NOTE.—All the above padders must be adjusted for a maximum reading on the Output Meter.

TABLE 3. PARTS LIST.

Ref. No.	Description	Part No.
T 5, VC 9, VC 10	1st Aerial Coil Assembly	320-1949
T 4, VC 2, VC 4	2nd Aerial Coil Assembly	320-1950
T 3, VC 11, VC 12	Oscillator Coil Assembly	320-1051
T 2, VC 6, VC 7	1st I.F. Coil Assembly	320-1947
T 1, VC 3, VC 5	2nd I.F. Coil Assembly	320-1943
VC 8, VC 13	Gang Condenser	31-1567
VC 1	Double Padder, 235 plus 50 mmfd.	31-6027
C 1	Moulded Condenser, .01mfd.	3903 SU.
C 2	Mica Condenser, 250mmfd.	300-1014
C 3	Moulded Condenser, .05mfd.	3615 DG.
C 4	Tubular Condenser, .001mfd.	30-4201
C 5	Mica Condenser, 110mmfd.	300-1012
C 6	Tubular Condenser, .25mfd.	30-4134
C 7	Moulded Condenser, .1mfd.	4989 SG.
C 8	Tubular Condenser, .001mfd.	30-4201
C 9	Mica Condenser, 110mmfd.	30-1012
C 10	Tubular Condenser, .1mfd.	30-4122
C 11	Electrolytic Condenser, 20mfd.	30-2002
C 12	Moulded Condenser, .015mfd.	3793 SG.
C 13	Mica Condenser, 50mmfd.	300-1015
C 14	Block Condenser	300-4001 D.
C 15	Electrolytic Condenser, 8 plus 8 mfd.	30-2028 T.
C 16	Tubular Condenser, .02mfd.	30-4113
R 1	½ watt Carbon Resistance, 70,000 ohms	5385
R 2	½ watt Carbon Resistance, 70,000 ohms	5385
R 3	½ watt Carbon Resistance, 2 megohms	5872
R 4	1 watt Carbon Resistance, 32,000 ohms	3525
R 5	½ watt Carbon Resistance, 10,000 ohms	4212
R 6	½ watt Carbon Resistance, 10,000 ohms	4212
R 7	½ watt Carbon Resistance, 20,000 ohms	6650
R 8	½ watt Carbon Resistance, 10,000 ohms	4212
R 9	¼ watt Carbon Resistance, 1 megohm.	33-1096
R 10	½ watt Carbon Resistance, 190,000 ohms	33-1117
R 11	½ watt Carbon Resistance, 51,000 ohms	4518
R 12	½ watt Carbon Resistance, 490,000 ohms	4517
R 13	½ watt Carbon Resistance, 400 ohms	33-1003
R 14	¼ watt Carbon Resistance, 51,000 ohms	6098
R 15	½ watt Carbon Resistance, 500 ohms	33-1002
R 16	Candohm Wire Wound Resistance, 35 plus 235 ohms	33-3224
R 17	½ watt Carbon Resistance, 8,000 ohms	5838
VR 1, SW 1	Volume Control, 350,000 ohms with On-Off Switch	330-5140
SW 2	Wave-change Switch	420-1003
CK 1	Field Coil	
T 6	Output Transformer Model 1281 B.G.	360-1007
T 7	Speech Coil Model 1281 C.G.	360-1018
P T	Mains Transformer, 200-260 v., 40-100 cycles	320-7007
S 1	6-Prong Valve Holder	27-6036
S 2	6-Prong Valve Holder	27-6036
S 3	4-Prong Valve Holder	27-6034
S 4	6-Prong Valve Holder	27-6036
S 5	7-Prong Valve Holder	27-6037
SM	Shadow Meter	450-2001 P.
VC 14	Tone Control	30-4390
	Valve Shield	28-2726
	Tuning Dial and Hub Complete	380-5060
	Pilot Bulb	34-2064
	Grid Clip	28-2214
	Escutcheon Complete	400-5011
	Chassis Mounting Rubbers	5189
V 1	Type 75 Double Diode Triode Valve	8002
V 2	Type 42E Pentode Output Valve	6447
V 3	Type 80 Full Wave Rectifier Valve	3148
V 4	Type 78E Variable-mu H.F. Pentode Valve	8315 E.
V 5	Type 6A7 Variable-mu Heptode Valve	34-2002 E.
	Large Brown Knob	270-4012
	Small Brown Knob	270-4010
	Knob Spring	280-5262

MODEL 1281x RADIO-GRAM.

MODEL 1281X is a five valve Superheterodyne receiver employing the same circut as the Model 1281, but with the following refinements:—

TONE CONTROL: This is continuously variable by means of a potentiometer and condenser and enables a fine degree of tone between mellow and brilliant to be obtained.

GRAMOPHONE: The operation of the gramophone is controlled by a separate switch located below the wave-change switch, which makes change over from radio to gram. 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 cabinet, allowing the chassis to be lowered and lifted out.

SPEAKER: A full-size 11 in. Speaker, Part No. 360-1018, is used. This speaker embodies the latest principles in acoustic development and provides high fidelity over the entire Audio-frequency range.

Technical data is the same as for Models 1281 B.G. and 1281 C.G.

PARTS LIST.

Similar to Parts List for Models 1281 B.G. and 1231 C.G., but with the following exceptions:

Delete:—VC.3	Tone Control	Part No.	300-4390
Add:— C.17	Mica Condenser, 1,000mmfd.	Part No.	300-1016
C.18	Moulded Condenser, .015mfd.	,, ,,	3793 C.
VR.2	Tone Control Resistor, 125,000 ohms	,, ,,	330-5001
S.W.3	Radio-gram. Switch	,, ,,	420-1005
	Rubber Chassis Bush	,, ,,	270-7019
	Type A.C.7 Motor, Turntable and 2,000 ohms Pick-up Assembly	,, ,,	350-2002