



# PHILCO



## Radio Service Bulletin No. 42

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

### Model 269

**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).

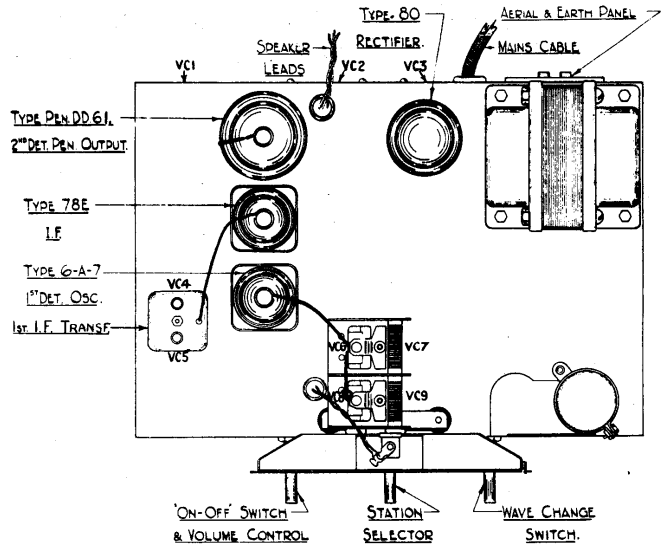
**POWER SUPPLY:** Alternating current mains of 200-260 volts, 40-100 cycles, when the correct transformer tapping is employed. Two tapings are provided: green covering 200-230 volts and white/black covering 231-260 volts respectively.

**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 025 or 099 Philco Set Tester on the 300 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.	6A7	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.

TABLE 2. RESISTANCES OF COILS.

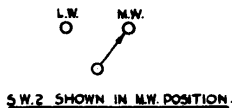
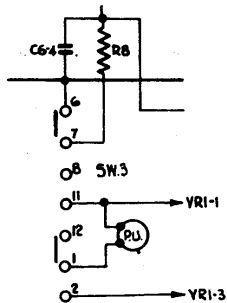
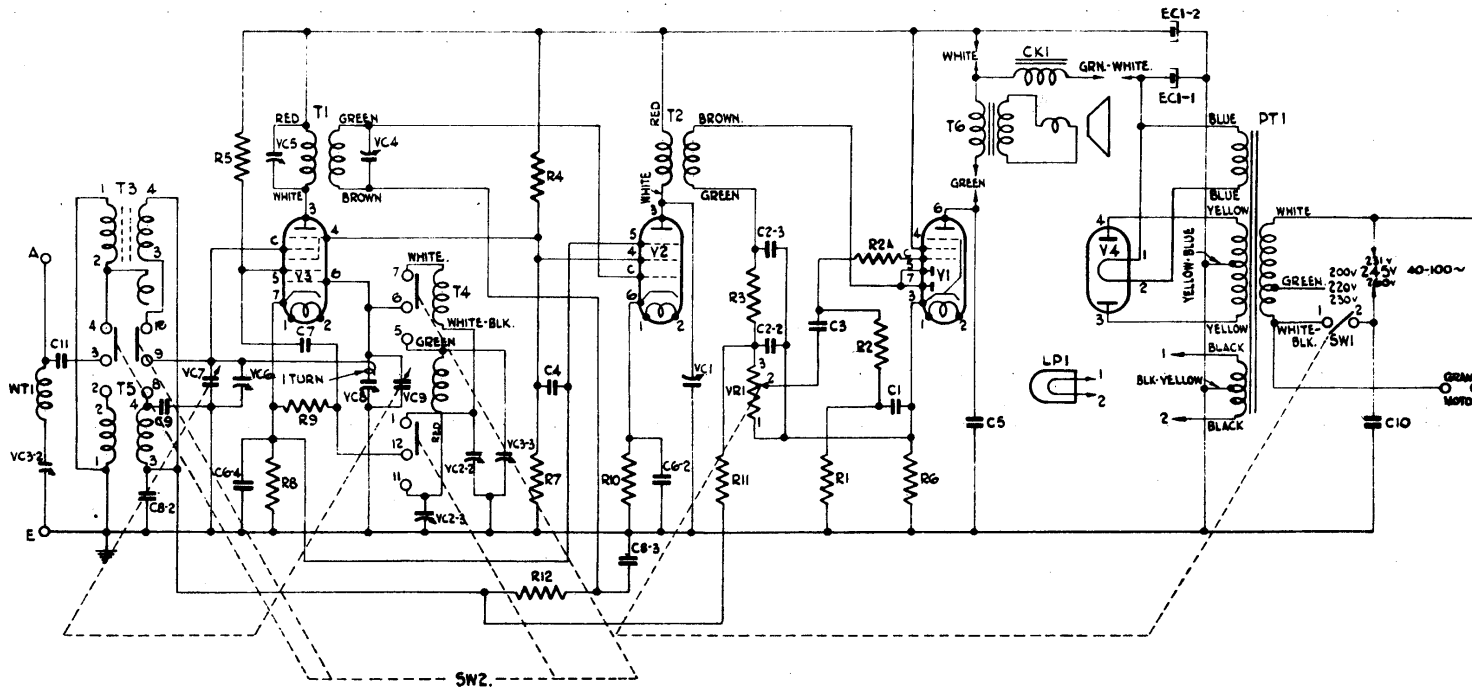
REF. NO.	TEST PROD 1	TEST PROD 2	RESIST. (OHMS)
WT1	A	VC3/2	20
T3 Prim.	TB4/1	Chassis	SW2 M.W. 25
T5 Prim.	TB4/1	Chassis	SW2 L.W. 120
T3 Sec.	V3 Cap	C8/2	SW2 M.W. 2.5
T5 Sec.	V3 Cap	C8/2	SW2 L.W. 40
T1 Prim	V3/3	TB2/2	8
T1 Sec.	V2 Cap	C8/3	12
T4	V3/6	TB3/1	SW2 M.W. 2.5 SW2 L.W. 17
T2 Prim.	V2/3	TB2/2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

REF. NO.	TEST PROD 1	TEST PROD 2	RESIST. (OHMS)
P.T.1 Prim.	White	Wh/Blk 245v.	35 approx.
P.T.1 Prim.	White	Green 220v.	30 approx.
H.T. Sec.	V4/3	Chassis	240 approx.
H.T. Sec.	V4/4	Chassis	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†

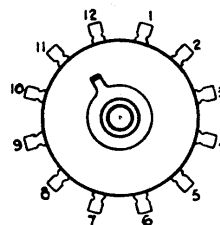
\* Resistance of L.T. windings taken with all valves removed.

† 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.

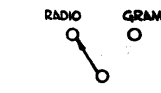


SW.2 SHOWN IN M.W. POSITION.

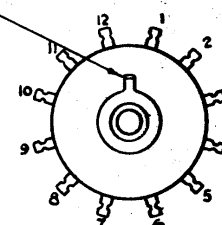


FRONT VIEW OF SW.2.  
CHASSIS BEING UPSIDE DOWN.

LOCATING PIN



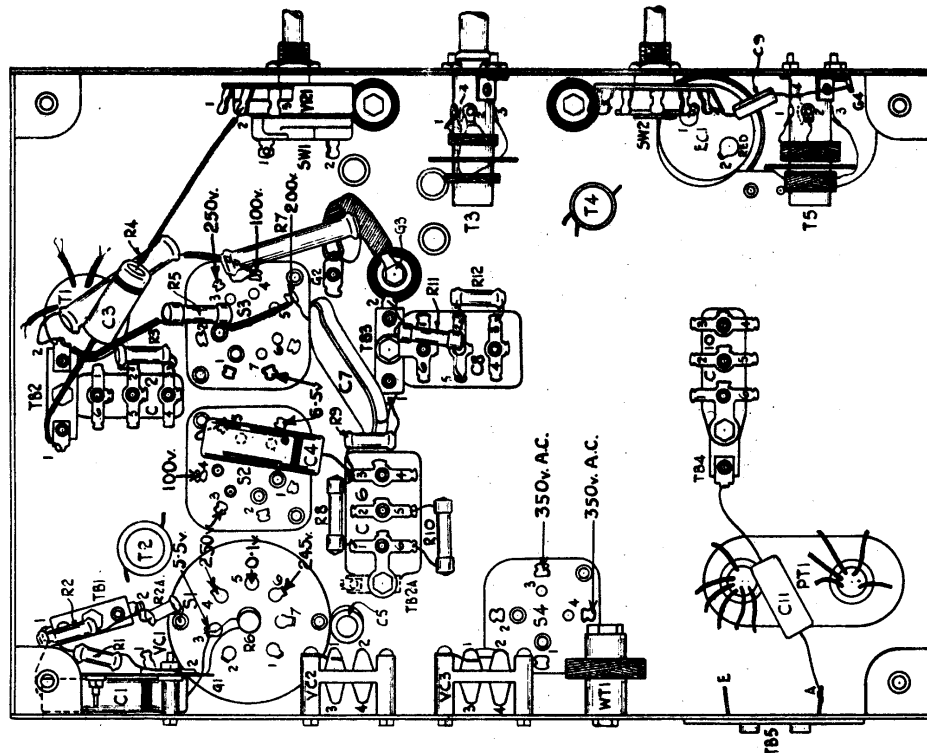
SW.3 SHOWN IN RADIO POSITION.



FRONT VIEW OF SW.3.

NOTE:-

REVISED WIRING OF R8 & ADDITION OF SW.3 & GRAM MOTOR CONNECTIONS ON MODEL 269 RADIO-GRAM ONLY.



NOTE · TB 2A ON MODEL 269 R.G. ONLY.

#### 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 099 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). Feed in and tune a signal of 290 Kc. Rock gang and trim VC.3 (nut) for maximum output.

Feed in and tune a 160 Kc. signal. Rock gang and pad VC.2 (nut) for maximum output. Readjust VC.3 (nut) at 290 Kc. and VC.2 (nut) at 160 Kc. until no further gain can be obtained.

Check calibration.

TABLE 3. PARTS AND PRICE LIST.

REF. No.	DESCRIPTION.	PART No.	LIST PRICE s. d.
T.1	1st I.F. Transformer Assembly ... ..	320-1047	5 6
VC.4		equiv.	
VC.5		32-1705	5 6
T.2		32-2130	
T.3		32-2064	
T.4		32-2094	
T.5	32-2065	5 3	
T.6	Output Transformer, Speech Coil and Cone (Speaker Complete) ... ..	360-1020	21 3
CK.1			
WT.1	I.F. Trap Coil ... ..	38-8851	1 0
VC.1	Single Padder 5-50 mmfd. ... ..	310-6011	1 0
VC.2	Double Padder 240+500 mmfd. ... ..	31-6099	2 3
VC.3	Double Padder 50+125 mmfd. ... ..	31-6098	2 0
VC.6	Two-gang Condenser and Trimmers ... ..	31-1617	11 3
VC.7			
VC.8			
VC.9			
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.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.9	Mica Condenser 50 mmfd. ... ..	300-1015	7
C.10	Moulded Condenser .015 mfd. ... ..	3793 S.G.	8
C.11	Mica Condenser 250 mmfd. ... ..	300-1014	6
R.1	1/4 watt Carbon Resistor. 490,000 ohms. ... ..	6097	9
R.2	1/4 watt Carbon Resistor. 490,000 ohms. ... ..	6097	9
R2A	1/4 watt Carbon Resistor. 100,000 ohms. ... ..	33-1047	9
R.3	1/4 watt Carbon Resistor. 51,000 ohms. ... ..	6098	9
R.4	1 watt Carbon Resistor. 25,000 ohms. ... ..	3656	9
R.5	1/4 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	1/4 watt Carbon Resistor 700 ohms. ... ..	330-1008	9
R.9	1/4 watt Carbon Resistor. 51,000 ohms. ... ..	6098	9
R.10	1/4 watt Carbon Resistor. 800 ohms. (+5%) ... ..	330-1009	9
R.11	1/4 watt Carbon Resistor. 2 Megohms ... ..	33-1025	9
R.12	1/4 watt Carbon Resistor 2 Megohms. ... ..	33-1025	9
VR.1	Volume Control 330,000 ohms. ... ..	330-5004	3 6
SW.1	On-Off Switch ... ..		
SW.2	Wave-Change Switch ... ..	42-1164	2 2
P.T.1	Mains Transformer. 200-260v. ... ..	320-7007	17 0
S.1	40-100 cycles ... ..		
S.2	7-Prong Socket, English type ... ..	270-6007	5
S.3	6-Prong Socket ... ..	27-6036	5
S.4	7-Prong Socket ... ..	27-6037	5
	4-Prong Socket ... ..	27-6034	4
	Erinoid Screw for WT1 ... ..	270-7022	5
	Valve Shield ... ..	28-2726	2
	Dial Scale ... ..	27-5033	1 3
	Dial Scale Shield ... ..	27-5034	10
	Pointer and Hub Assembly ... ..	380-5125	9
	Pilot Bulb ... ..	6608	1 4
	Grid Clip ... ..	28-2214	5 doz.
	Rubber Bush ... ..	4126	1
	Rubber Buffers ... ..	5189	1
V.1	Type Pen. D.D. 61 Double Diode Pentode Valve ... ..	340-2000	21 0
V.2	Type 78E. Variable-mu. H.F. Pentode Valve ... ..	8315E	13 0
V.3	Type 6A7 Variable-mu. Heptode Valve ... ..	34-2002E	16 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 ... ..	270-4041	9
	"Volume" Knob and Spring ... ..	270-4037	5
	"Wave-change" Knob and Spring ... ..	270-4038	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

## Model 269 – Radiogram

Model 269 Radiogram is a 4-valve superheterodyne employing the same circuit as the Model 269 Baby Grand, but with the following refinements:—

GRAMOPHONE: The operation of the gramophone is controlled by a separate switch located on the motor board, which makes change over from radio to gram. without the possibility of radio break-through.

CONTROLS: The radio controls and tuning dial are brought out to the front of the cabinet. The volume control is effective on both radio and gramophone reproduction.

REMOVAL OF CHASSIS: This is easily effected by removing the four screws securing the chassis to the base-board and slacking off the radiogram switch fixing nut.

TOP CHASSIS DIAGRAM: This is the same as for Model 269 Baby Grand except for two flex leads which are brought out by the pilot lamp leads for connection to the change-over switch (Sw.3), and the motor cable.

CIRCUIT DIAGRAM: The changes are as shown on the diagram.

UNDER CHASSIS DIAGRAM: The changes are as shown in dotted lines on the diagram. Tables 1 and 2 and Alignment Procedure are the same as for Model 269 Baby Grand.

### PARTS AND PRICE LIST.

Add

REF. No.	DESCRIPTION.	PART No.	LIST PRICE	
			£	s. d.
SW.3	Radiogram Switch ... ..	42-1164	2	2
	Type AC7 Motor, Turntable and 8,000 ohms Pick-up Assembly ... ..	350-2008	3	12 6
	Switch Cables ... ..	LO-1017	1	9
		LO-1028	1	3
	Motor Cable ... ..	LO-1029	1	3
	Radiogram Switch Knob and Spring ... ..	270-4036		5



# PHILCO



## Radio Service Bulletin No. 42a.

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

### Model 269—Runs 3 & 4.

The general description, Table 1—Voltages, and Table 2—Resistances of Coils, are the same as for Runs 1 and 2 Models as set out in Radio Service Bulletin No. 42. Runs 3 and 4 Models incorporate a trimming condenser in the L.W. Aerial Coil Secondary circuit instead of the fixed condenser (C9) which is used in Runs 1 and 2 Models.

In Runs 3 and 4 the Radiogram Models incorporate a .01 mfd. condenser (C12) and a  $\frac{1}{4}$  watt resistor (R13) joined in series across the pick-up leads at tags 1 and 11 of S.W.3.

In later Models a .1 mfd. condenser (Part No. 30-4170) is connected in parallel with the electrolytic condenser EC 1-2. On the under chassis diagram it should be located between S3 and VR1. One connection is taken to TB2 tag 2 and the other to the earth lug G2.

#### ALIGNMENT PROCEDURE.

This is the same as for Runs 1 and 2 Models as set out in Radio Service Bulletin No. 42, except for the last part which is as follows:—

**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.

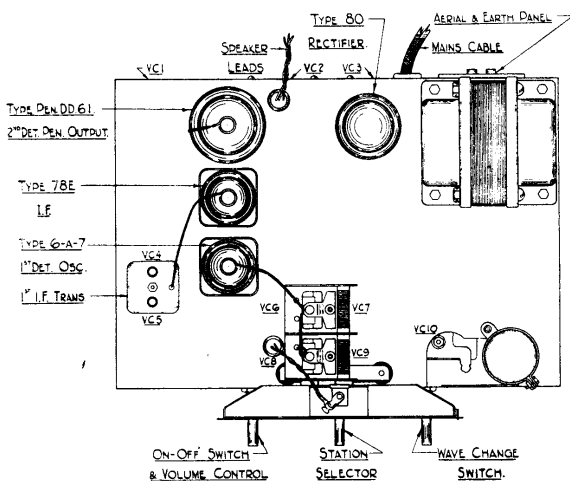
#### TABLE 3—PARTS AND PRICE LIST.

Same as for Runs 1 and 2 Models as set out in Radio Service Bulletin No. 42, except as follows:—

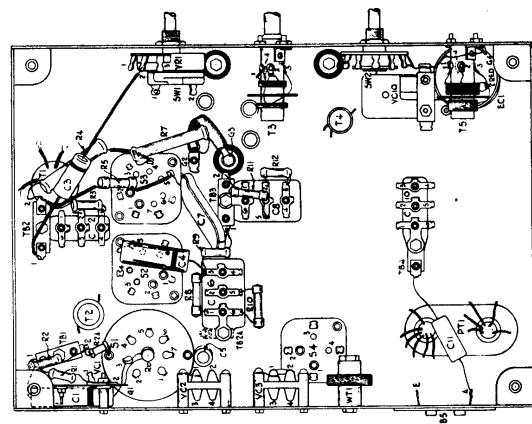
Delete:—		Ref. No.	Description.	Part No.	List Price.
	VC1	Single Padder 5-50 mmfd.	- - -	310-6011	s. d. 1 0
	C9	Mica Condenser 50 mmfd.	- - -	300-1014	7

Add:—		Ref. No.	Description.	Part No.	List Price.
	VC1	Single Padder 15-80 mmfd.	- - -	310-6013	s. d. 1 0
	VC10	Single Padder 15-80 mmfd.	- - -	310-6013	1 0
	C12	Tubular Condenser .01 mfd.	- - -	30-4124	6
	R13	$\frac{1}{4}$ watt Carbon Resistor, 51,000 ohms	-	6098	9

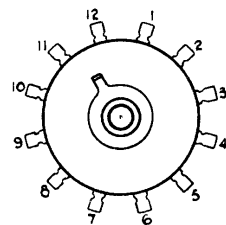
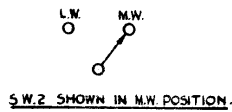
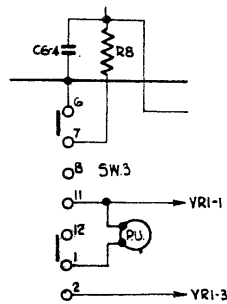
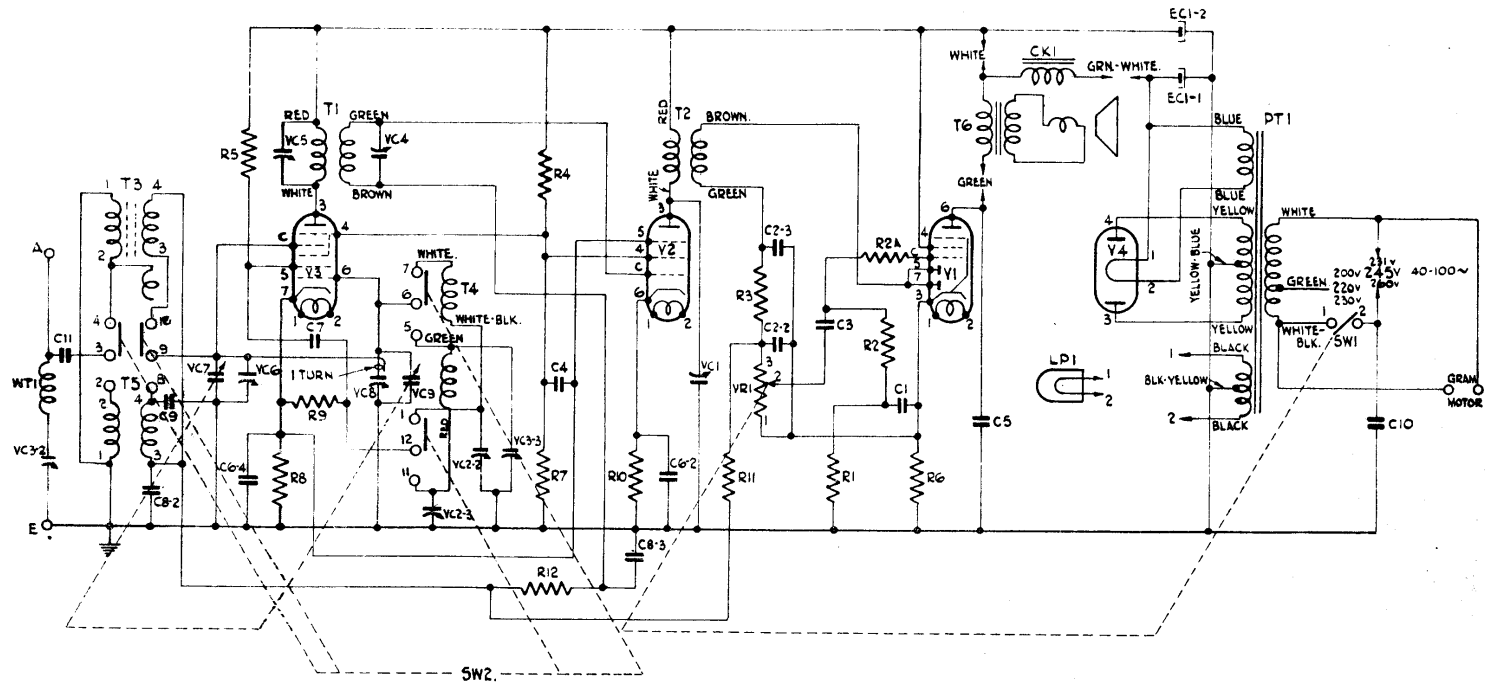


TOP CHASSIS DIAGRAM.

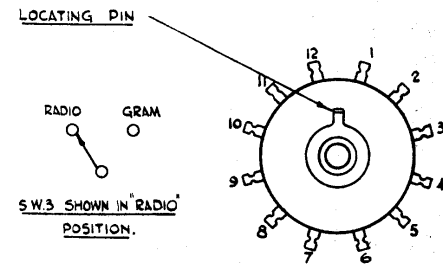


NOTE: TB 2a on Model 269 EQ. ONLY

LOWER CHASSIS DIAGRAM.



FRONT VIEW OF SW2.  
CHASSIS BEING UPSIDE DOWN.



FRONT VIEW OF SW3.

**NOTE:-**  
REVISED WIRING OF R8 & ADDITION  
OF SW3 & GRAM MOTOR CONNECTIONS  
ON MODEL 269 RADIO-GRAM ONLY.