



PHILCO



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Model D-732—Runs 1 & 2

TYPE CIRCUIT: Seven-valve Superheterodyne Receiver with Remote Tuning Unit for armchair control, and Double Pentode Output (7 watts), for operation on Short, Medium and Long wavebands. Delayed A.V.C. and the Philco system of Automatic Tone Compensated Volume Control are incorporated in the circuit, and provision is made for connecting a pick-up which may be left permanently connected to the Receiver if desired, as the gramophone operation is controlled by the change-over switch at the rear of the Power Unit. Provision is also 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 200-229 volts or 230-250 volts, 50-60 cycles, when the voltage adjusting plug is screwed fully into the correct socket on the mains transformer panel.

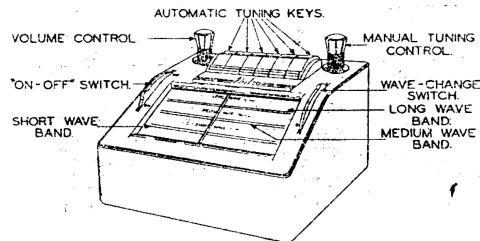
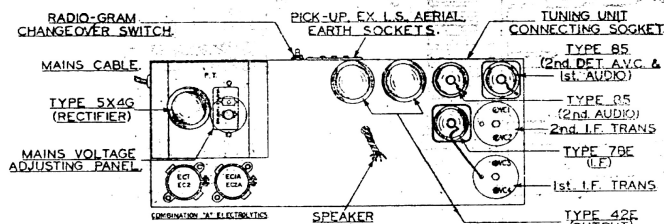
WAVEBANDS: COVERAGE: THREE: (a) Short, 18-6 megacycles (16.6-50 metres); (b) Medium, 190-550 metres (1,579-545.4 kilocycles); (c) Long, 1,000-2,000 metres (300-150 kilocycles).

TUNING: The Remote Tuning Unit enables operation of the Receiver to be carried out from a distant point. Every function of the Receiver is within reach. Six Automatic Tuning Keys giving a choice of eight Medium and Long wave stations; slow motion manual tuning drive-ratio 25-1 for slow and accurate tuning of Short, Medium and Long wave stations, and new full-vision scale.

LOUD SPEAKER: A 10 in. diameter auditorium type fully energised moving coil speaker is used. This speaker embodies the latest principles in acoustic design and covers the entire range of useful audio frequencies.

INTERMEDIATE FREQUENCY: 475 Kc.

POWER CONSUMPTION: 75 watts approx.



NOTE—Type 6A7 (1st Det. & Osc.) and Pilot Lamps (Pt. No. 34-2141) are fitted in the remote tuning unit.

TOP CHASSIS DIAGRAM

TABLE 1 —
VOLTAGES

Valve socket readings to chassis taken with an 065, 077 or J3 PHILCO SET TESTER, using the 500, 250 and 10 volts ranges. Volume control at minimum, Radio-gram switch in Radio position (upwards), wave-change switch in M.W. position and no aerial connected. A.C. line 220 volts, 50 cycles.

POSITION	VALVE	ANODE	SCREEN
1st Detector and Oscillator, S7	6A7	Pin 3. 250 v. Pin 5. 120 v.*	Pin 4. 100 v.
L.F. Amplifier, S5	78E	Pin 3. 285 v.	Pin 4. 100 v.
2nd Detector, A.V.C. and 1st L.F. Amplifier, S6	85	Pin 3. 35 v.	—
2nd L.F. Amplifier, S4	85	Pin 3. 250 v.	—
Pentode Output, S3	42E	Pin 3. 290 v.	Pin 4. 300 v.
Pentode Output, S2	42E	Pin 3. 290 v.	Pin 4. 300 v.
Full Wave Rectifier, S1	5X4G	Pin 3. 330 v. A.C. Pin 5. 330 v. A.C.	—

* Oscillator Anode Volts. Bias 22 volts, measured between S2/6 and chassis. Delay voltage, 2.5 volts, measured between C5/2 and chassis. Total D.C. 365 volts, measured between EC.1 positive and C5/2. V.2, V.3, V.4, V.5, V.6, V.7, Heaters and LP.1 and LP.2 filaments, each 6.3 volts A.C.; V.1 filament, 5 volts A.C., measured between Pins 1 and 2 on each socket.

TABLE 2—RESISTANCES OF COILS.

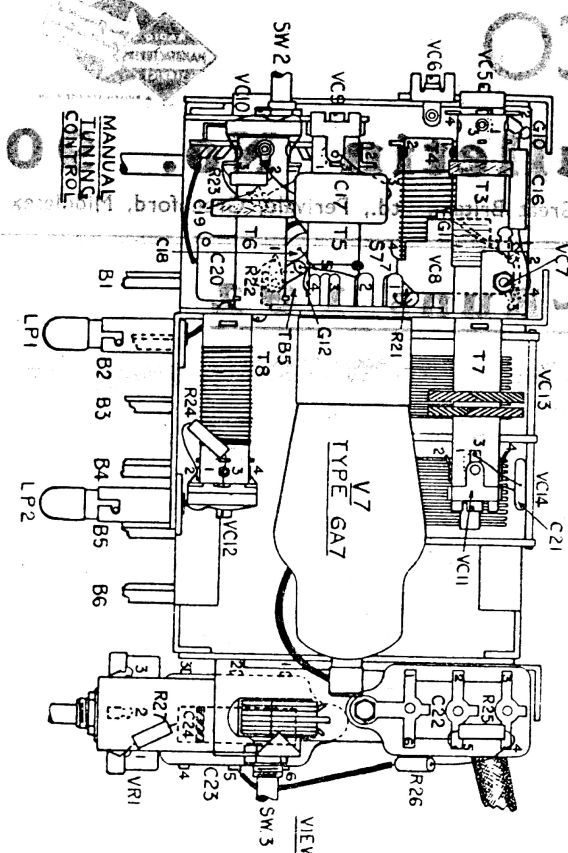
REF. No.	TEST PROD. 1	TEST PROD. 2	RESISTANCE (Ohms.)	REF. No.	TEST PROD. 1	TEST PROD. 2	RESISTANCE (Ohms.)
T.6	V.7 Cap	T.5/2	Sw.2 L.W. 30	CK.1	TB.1 Skt. "A"	Chassis	25
T.6	V.7 Cap	T.5/2	Sw.2 M.W. 3.5	T.1 Primary	TB.3/2	V.5/3	8
T.8 Primary	T.8/1	T.8/3	0.5	T.1 Secondary	V.6/5	TB.4/3	5
T.8 Secondary	V.7 Cap	C.23/3	Sw.2. S.W. less than 0.5	T.9 Primary	V.3/3	V.3/4	200 approx.
T.7	V.7/3	C.22/3	12	T.9 Secondary	Output	Output	0.2†
T.7 Tapping 1	S.8 Plug Pin 7	C.22/3	Less than 0.5	Transformer	Transformer	Transformer	
T.7 Tapping 2	T.7/4	C.22/3	6	Lead 1	Lead 2	Lead 2	2†
T.3	V.7/6	T.4/1	Sw.2. L.W. 25	CK.2	V.3/4	V.1/8	400
			M.W. 4	P.T. Primary	S.8/4	P.T.1/2	10
T.4 Primary	V.7/6	T.4/1	Sw.2. S.W. less than 0.5	P.T. Primary Tap	S.8/4	P.T.1/3	8
T.4 Secondary	T.4/2	T.4/1	Less than 0.5	H.T. Secondary	V.1/5	C.5/2	50 approx.
T.2 Primary	TB.3/1	VC.3 Tag (inside can)	12	H.T. Secondary	V.1/3	C.5/2	50 approx.
			Less than 0.5	Rectifier L.T.	V.1/7	V.1/8	0.1†
T.2 Primary Tap	TB.3/1	S.8/7	8	Secondary	V.2/1	V.2/2	0.2†
T.2 Secondary	V.5 Cap	V.5/5		Heater L.T. Secondary			

† Resistance of T.9 Secondary alone and Speech Coil alone (taken when disconnected).

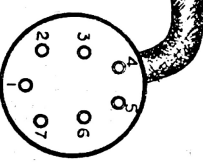
‡ Resistance of L.T. windings taken with all valves removed.

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

UNDER CHASSIS DIAGRAM—MODEL D.739—RUN 1
 Modifications for Run 2 are given on Page 6.

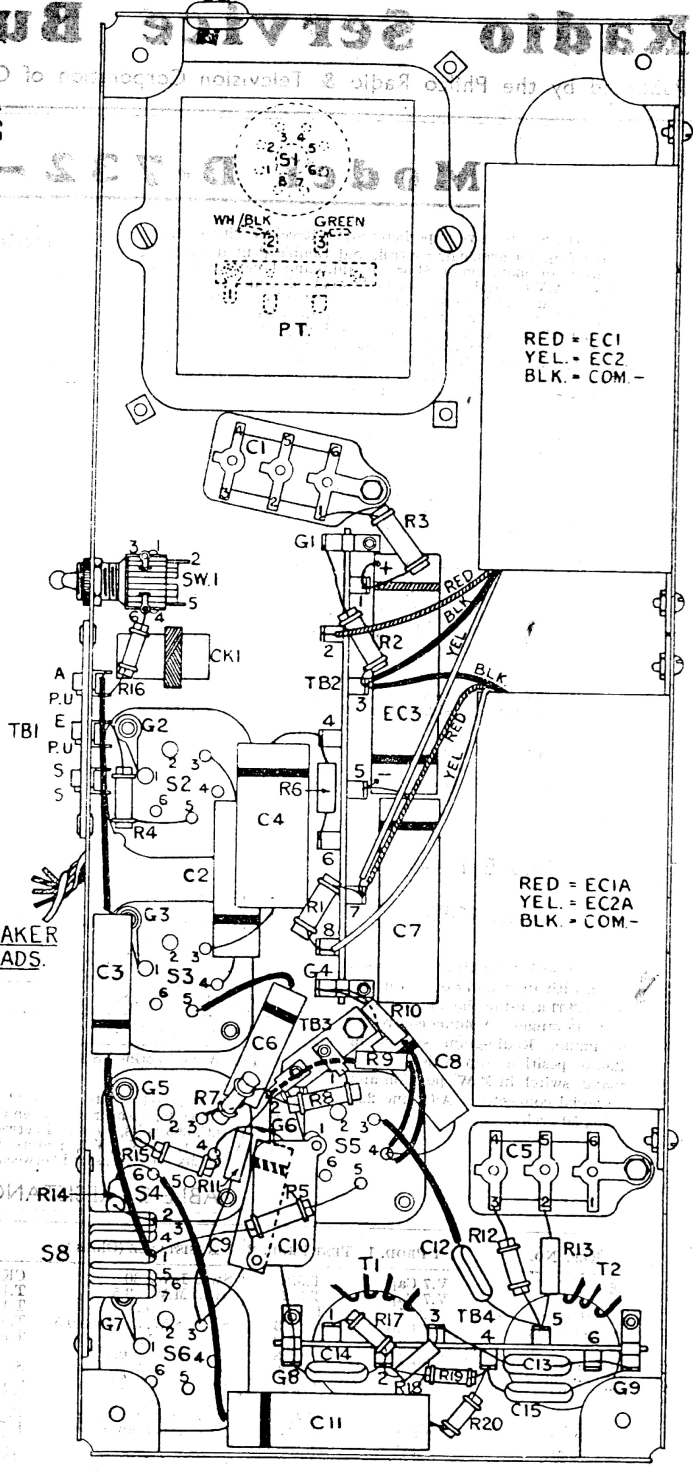


VIEW OF PRONGS ON SB PLUG.



SPEAKER LEADS.

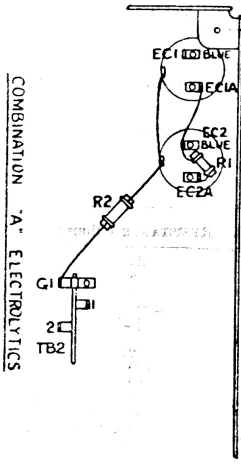
MAINS CABLE.



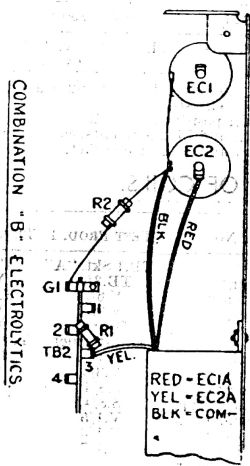
RED = EC1
 YEL. = EC2
 BLK. = COM.-

RED = EC1A
 YEL. = EC2A
 BLK. = COM.-

COMBINATION "C" ELECTROLYTICS.



COMBINATION "A" ELECTROLYTICS



COMBINATION "B" ELECTROLYTICS

ALIGNMENT PROCEDURE—MODEL D.732.

Before leaving the Factory, all Philco Receivers are accurately aligned, but if misalignment is suspected through damage, no alteration must be made without instruction in the correct adjustment of the trimming and padding condensers. It should be carried out only with the aid of an accurately calibrated Signal Generator, and for this purpose the PHILCO ALL-PURPOSE SET SETTER MODEL 077 or 077E is recommended.

Connect the Output Meter across the Primary of the Output Transformer, i.e. green and white leads. Set wave-change switch to middle position (M.W.), and turn volume control fully clockwise.

SETTING UP TUNING CONDENSER CRANK: Loosen set screw on tuning condenser crank and open tuning condenser to fullest extent. Insert a .006 in. feeler gauge under the heel of the moving vanes and close the tuning condenser on to gauge. With the tuning condenser in this position and Manual Tuning knob pushed in, rotate the knob counter-clockwise to its fullest extent, and screw up firmly the set screw on the tuning condenser crank. Remove feeler gauge.

SETTING UP SCALE ASSEMBLY: Unscrew the kalon screws holding the scale assembly, so that the large gear may be turned without moving the tuning knob and gear. With the scale assembly in this position, turn the scale gear clockwise until one or two turns of string are left on top side of gear spindle. Then screw scale assembly back into position, making sure that the gear is not shifted in the mounting process. Adjust pointer on string to read on 18 Mc.

Check for smooth travel of tuning condenser and pointer from end to end of scale, by rotating tuning knob.

INTERMEDIATE FREQUENCY: The I.F. trimmers (VC's 1, 2, 3 and 4) must first be carefully adjusted by feeding in a 475 Kc. signal from the Signal Generator via a .1 mfd. condenser to the grid cap of the 6A7 valve (with grid lead connected) and the Signal Generator earthed to the Receiver Earth socket or 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.

Transfer Signal Generator lead via a Standard Dummy in place of the .1 mfd. condenser, to the Aerial socket.

MEDIUM WAVES: Set pointer to 1,400 Kc. (214 metres); feed in a signal of 1,400 Kc. and trim VC's 7 and 9 in that order for maximum output.

Feed in and tune a signal of 600 Kc. (500 metres); rock tuning condenser and pad VC.8 (screw) for maximum output. Readjust VC.7 at 1,400 Kc.

Repeat the above operation until no further improvement results.

LONG WAVES: Turn wave-change switch to the maximum clockwise position (L.W.) and set pointer to read on 1,293 metres (232 Kc.)—this corresponds to Luxembourg.

Feed in a signal of 232 Kc. (1,293 metres) and adjust VC's 5 and 10 in that order for maximum output.

Feed in and tune a signal of 160 Kc. (1,875 metres); rock tuning condenser and pad VC.8 (nut) for maximum output. Readjust VC.5 at 232 Kc.

Repeat the above operation until no further improvement is obtainable.

SHORT WAVES: Turn wave-change switch to the maximum counter-clockwise position (S.W.). Substitute a 100 ohms resistor for the Standard Dummy and feed in an 18 Mc. signal. Set pointer to read on 18 Mc., and adjust VC.6 for the second signal heard from tight (care is necessary as the two peaks are narrowly spaced).

NOTE.—Due to the very small difference between the pre-selector and oscillator frequencies, the adjustment of VC.12 will have a tendency to "pull" or change the frequency of the oscillator. By shunting a 21-plate variable condenser (approx. .00035 mfd.) across the oscillator section of the tuning condenser (VC.13) and tuning it so that the second harmonic instead of the fundamental beats with the incoming signal, this "pull" can be minimised.

Connect the shunt condenser between VC.6 tag and chassis and tune it (about half open) for signal at 18 Mc. Trim VC.12 for maximum output. Disconnect shunt condenser and retrim VC.6.

Check that the 18 Mc. image is obtained at approximately 17.1 Mc.

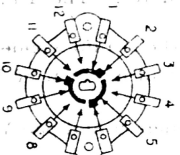
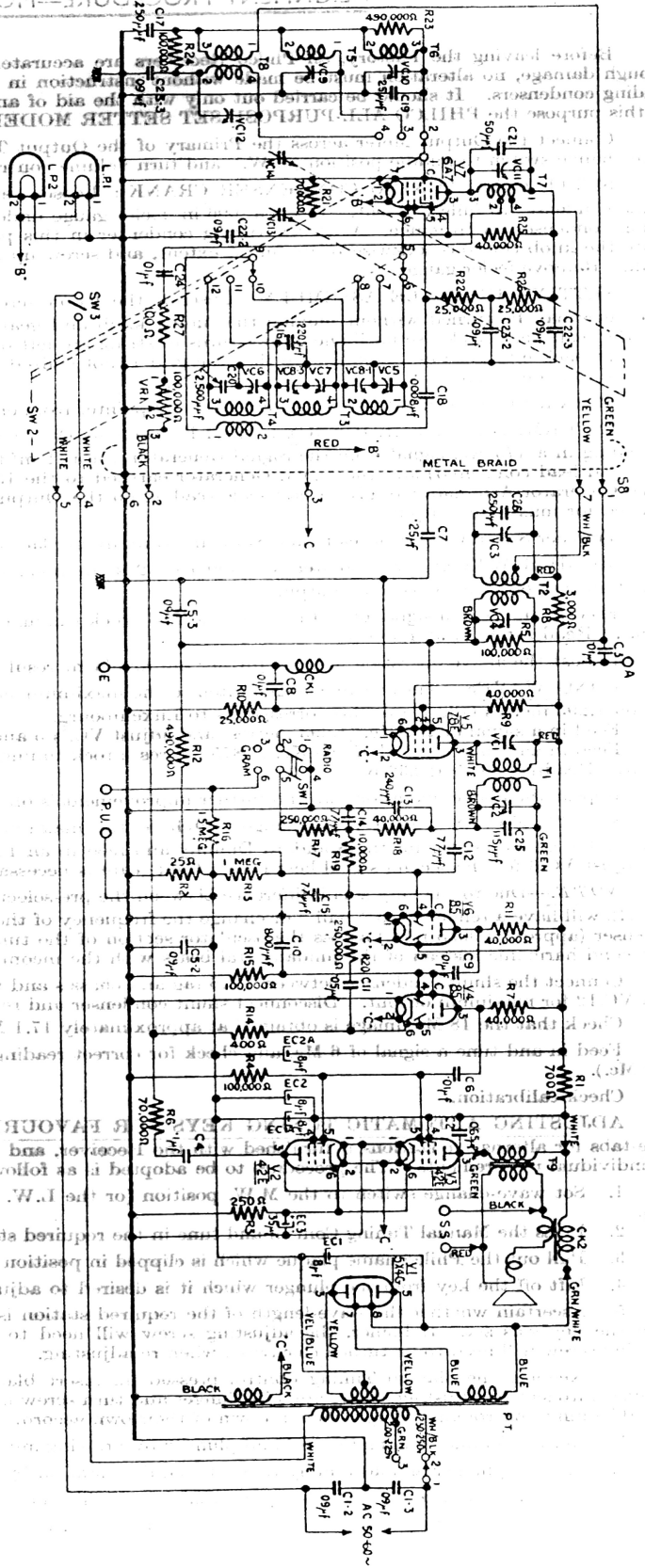
Feed in and tune a signal of 6 Mc. and check for correct reading on scale. (There is no tracker adjustment for 6 Mc.).

Check calibration.

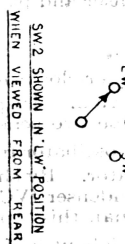
ADJUSTING AUTOMATIC TUNING KEYS FOR FAVOURITE STATIONS: An envelope containing name-tabs for alternative stations is furnished with the Receiver, and one or more of the keys may be changed to suit individual requirements. The procedure to be adopted is as follows:—

1. Set wave-change switch to the M.W. position (or the L.W. position in the case of single L.W. stations only).
2. Press the Manual Tuning Control and tune in the required station.
3. Pull out the Philco name plaque which is clipped in position above the wave-scale.
4. Lift off the key from the plunger which it is desired to adjust; this will expose the adjusting screw.
5. Ascertain whether the wave-length of the required station is higher or lower than that of the station to which the key was set. If higher, the adjusting screw will need to be turned counter-clockwise; if lower, the adjusting screw will need to be turned clockwise, when re-adjusting.
6. Keeping the Manual Tuning Control pressed in, insert blade of special screwdriver, supplied with the Receiver, into slot of adjusting screw, press in plunger and turn screw in required direction (see 5 above), until both Manual Tuning Control and plunger remain down of their own accord.
7. Release Manual Tuning Control and plunger by pressing any one of the remaining keys.
8. Press in plunger and accurately tune the required station by turning the adjusting screw.
9. Check accuracy of your setting by alternately pressing the Manual Tuning Control and plunger.
10. Place correct station name-tab in bottom of key. Replace key on plunger and press Philco name plaque in position.

through language, to align the antenna in the correct position in the correct adjustment of the tuning and loading condensers. It is recommended that the antenna be aligned in the correct position in the correct adjustment of the tuning and loading condensers. It is recommended that the antenna be aligned in the correct position in the correct adjustment of the tuning and loading condensers.



VIEW OF SW2 FROM REAR
NOTE: SPINDLE NOTCH ON LEFT



SW2 SHOWN IN L.W. POSITION
WHEN VIEWED FROM REAR

CIRCUIT DIAGRAM—MODEL D732—RUN 1.

Modifications for Run 2 are shown on Page 6.

PARTS AND PRICE LIST — MODEL D.732 — Continued.

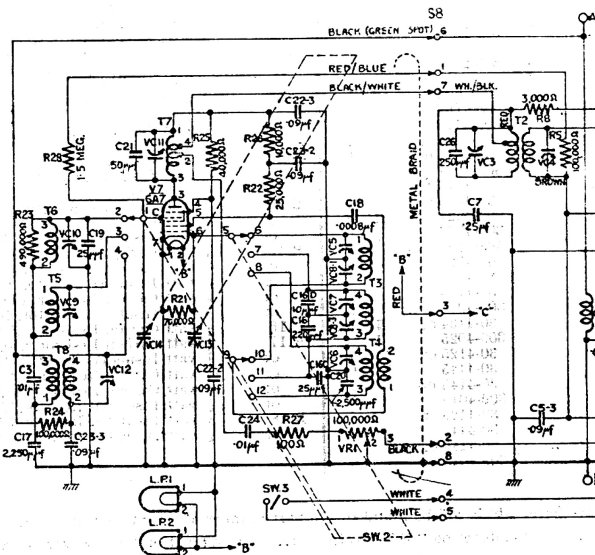
REF. No.	DESCRIPTION.	PART No.	List Price s. d.	REF. No.	DESCRIPTION.	PART No.	List Price s. d.
R.19	1/2 watt Carbon Resistor, 10,000 ohms	33-1000	8		7-Prong Plug	389-5102	2 8
or	1/2 watt Insulated Resistor, 10,000 ohms	330-2014	8 5		Cable Clamp	28-2345	oz. 5d
or	1/2 watt Insulated Resistor, 10,000 ohms	339-2018	8		Rubber Grommet	270-7341	each 1
R.20	1/2 watt Carbon Resistor, 240,000 ohms	33-1097	8		Grid Clip	28-2214	doz. 6
or	1/2 watt Insulated Resistor, 240,000 ohms	330-2002	8		Valve Shield	429-2726	each 3
or	1/2 watt Carbon Resistor, 250,000 ohms	33-1185	8		Automatic Tuning Keys Assembly	429-1011	
or	1/2 watt Insulated Resistor, 250,000 ohms	339-2025	8		Automatic Tuning Keys	279-4008	1 5
R.21	1/2 watt Insulated Resistor, 70,000 ohms	330-2034	8		Condenser Drive Arm and Grubscrew	389-5095	
or	1/2 watt Insulated Resistor, 65,000 ohms	339-2022	8		Scale Holder and Brackets Assembly	389-1015	
R.22	1/2 watt Carbon Resistor, 25,000 ohms	33-1013	8		Drive Cord	279-7048	yard 1
or	1/2 watt Insulated Resistor, 25,000 ohms	330-2007	8		Pointer	289-1067	4
		or 339-2020	8		Jockey Pulley Spring	289-8001	1
R.25	1/2 watt Insulated Resistor, 35,000 ohms	330-2051	8		Dial Scale	279-7079A	9
or	1/2 watt Insulated Resistor, 40,000 ohms	339-2021	8		Switch Operating Crank Assembly	279-4016	
R.26 (Run 1)	1/2 watt Carbon Resistor, 25,000 ohms	4516	8		Bezel	279-4011	5 4
or	1/2 watt Insulated Resistor, 25,000 ohms	330-2010	8		Bezel Window	279-5004	10
or	1/2 watt Insulated Resistor, 20,000 ohms	330-2049	8		Name Plaque and Clip Assembly	279-4017	
or	1/2 watt Insulated Resistor, 25,000 ohms	339-2020	8		Bezel Mounting Screw	WB-448	
or R.26	1/2 watt Insulated Resistor, 10,000 ohms (Run 2)	330-2014	8		Station Names Kit (6 name-tabs)	409-5006	8
		or 330-2060	8		Station Names Kit (Alternative name-tabs)	409-5007	2 3
R.27	1/2 watt Insulated Resistor, 100 ohms	330-2060	8		Chassis Mounting Bolts (Power Unit)	W-1345	each 1
or	1/2 watt Insulated Resistor, 85 ohms	330-2062	8		Chassis Mounting Washers (Power Unit)	28-2059	doz. 2
R.28	1/2 watt Carbon Resistor, 1.5 megohms (Run 2)	32-1188**	8		Chassis Mounting Screws (Tuning Unit)	W-453A	doz. 7
					Chassis Mounting Washers (Tuning Unit)	WW-300	doz. 2
					or WW-303		
V.R.1	Volume Control, 100,000 ohms	339-5001	3 2		Knob Gear and Spring Assembly	389-5100	
SW.1	Radio-gram Changeover Switch	420-1008	4 6		Knob Gear Spring	280-5262	doz. 3
SW.2	Wave-change Switch	429-1003	4 6		Knob and Grubscrew Assembly	279-4019	
SW.3	On-Off Switch	429-1004	2 3		Knob Grubscrew	WB-324	doz. 4
					Red Wander Plug	380-5087	doz. 2 6
					Black Wander Plug	380-5015	doz. 2 6
P.T.	Power Transformer, 50-60 cycles 320-8041 Housing Assembly: including Rectifier, Socket and Voltage Adjusting Panel	Complete Assembly 320-8039	38 0	L.P.1 L.P.2	Pilot Lamps	34-2141	1 0
or	Power Transformer, 25-100 cycles 320-8042 Housing Assembly	Complete Assembly 320-8043	55 0	V.1	Type 5X4G. Full Wave Rectifier Valve	34-2122	
				V.2	Type 42E Pentode Output Valve	6447-E	
				V.3	Type 42E Pentode Output Valve	6447-E	
				V.4	Type 85 Double Diode Triode Valve	7532	
				V.5	Type 78E Variable- μ H.F. Pentode Valve	8315-E	
				V.6	Type 85 Double Diode Triode Valve	7532	
				V.7	Type 6A7 Variable- μ Heptode Valve	34-2002	
S.8	Voltage Adjusting Plug	380-5340	doz. 2 6		Instruction Manual	399-5144	
	6-Prong Valve Holder	27-6036	1 0		Remote Unit Extension Cable (Run 1)	LO-1081**	yd. 2 3
	7-Prong Valve Holder	27-6037	1 0		Remote Unit Extension Cable (Run 2)	LO-1088**	
	7-Prong Valve Holder (English Type)	270-6007	1 0		Remote Unit Extension Socket	680-6156	
	Mains Cable	LO-1009	2 2		Wander Plug Extension Socket	29-2695	
	Speaker Cable	LO-1035	1 8	or	Automatic Tuning Keys Adjusting Tool	289-1152	each 2
	Tuning Unit Connecting Cable, 12 feet (Run 1)	LO-1084**	8 10				
or	Tuning Unit Connecting Cable, 12 feet (Run 2)	LO-1089**	8 10				

** Parts for Run 1 are not separately interchangeable with parts for Run 2, and vice versa.
Above prices do not apply in Eire.

MODEL D.732 — RUN 2

UNDER CHASSIS DIAGRAM: C.3 is transferred from the Power Unit to a position alongside T.8; R.28 is added to VC.14 tag; C.16C is added across C.16; and C.16D is added across VC.7 in the Remote Tuning Unit.

The metal braiding on the connecting cable is brought out externally to a wander plug at S8 end of cable. This wander plug is inserted in one of the eyelets fixing the connecting socket (S8), and is referred to as S8/8.



NOTE.—Revised wiring to S8; addition of C.16C, C.16D, R.23; and R.26 changed from 25,000 ohms. to 10,000 ohms. for Run 2.