HOTPOINT-BANDMASTER

Models F55DE & D35DE

FIVE VALVE, TWO BAND, A.C. OPERATED SUPERHETERODYNE

TECHNICAL INFORMATION & SERVICE DATA

ELECTRICAL SPECIFICATIONS.

FREQUENCY RANGE ..... Medium Wave 1600-550 Kc. (187.5-545M)
Short Wave 22-7 Mc. (13.6-43M)

INTERMEDIATE FREQUENCY 455 Kc.

POWER SUPPLY RATING ..... 200-260 volts, 50-60 C.P.S.
(Models are produced with other voltage and frequency ratings)

POWER CONSUMPTION .... 60 watts

DIAL LAMP (2) ..... 6.3 volts, 0.25 amp. M.E.S.

VALVE COMPLEMENT—
(1) 6J8G Converter
(2) 6U7G I.F. Amplifier
(3) 6B6G Det., A.V.C. and A.F. Amp.
(4) 6V6GT/G Output
(5) 5Y3GT/G Rectifier

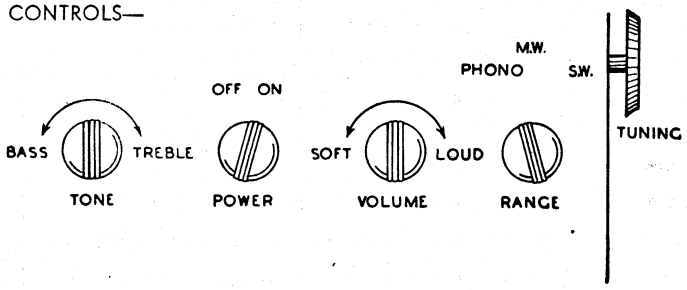
LOUDSPEAKER—

Model F55DE:
7 inch—Code No. AW4
Transformer—XA1
V.C. Impedance—3 ohms at 400 C.P.S.
Field—1,500 ohms

Model D35DE:
12 inch—Code No. AS13
Transformer—TX20
V.C. Impedance—2.2 ohms at 400 C.P.S.
Field—1,500 ohms

UNDISTORTED POWER OUTPUT ..... 4.5 watts

CONTROLS—



MECHANICAL SPECIFICATIONS.

	Height	Width	Depth
Cabinet Dimensions (inches)—			
F55DE	11⅜	23¾	10⅝
D35DE	33⅝	30½	13⅛
Chassis Base Dimensions	3	15	6½
Overall Chassis Height (inches)			8

	Height	Width	Depth
Weight (nett lbs.)—			
F55DE			34
D35DE			74
Carton Dimensions (inches)—			
F55DE	12½	23⅛	12
D35DE	34¼	33⅝	16½
Cabinet Finish			Walnut Veneer

GENERAL DESCRIPTION.

The models F55DE and D35DE are table and console models, respectively, and employ the same chassis.

Features of design include: Tropic-proof construction, power switch on chassis, phono-range switch, automatic volume control, continuously variable tone control, straight-line, edge-lighted dial with metropolitan stations printed in ⅛-inch high characters, magnetite cores in I.F. transformers and broadcast oscillator coil, air-dielectric trimming capacitors, broadcast tuning range extended to 1,600 kc. to permit reception of proposed stations above 1,500 kc.

ALIGNMENT PROCEDURE.

Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturers with precision instruments, and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using specialised equipment.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis, and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments.

(1) A.W.A. Junior Signal Generator, type 2R3911

or

(2) A.W.A. Modulated Oscillator, type J6726.

If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals, and, for short-wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.

(3) Output Meter.

The instrument recommended should have an output impedance of 5,000 ohms and a range of 5-3,000 milliwatts. The meter should be connected across the primary of the loudspeaker transformer with the voice-coil of the loudspeaker open-circuit.

If the output meter used is one which does not impress a load on the anode circuit of the output valve, it will not be necessary to open-circuit the voice-coil.

ALIGNMENT TABLE.

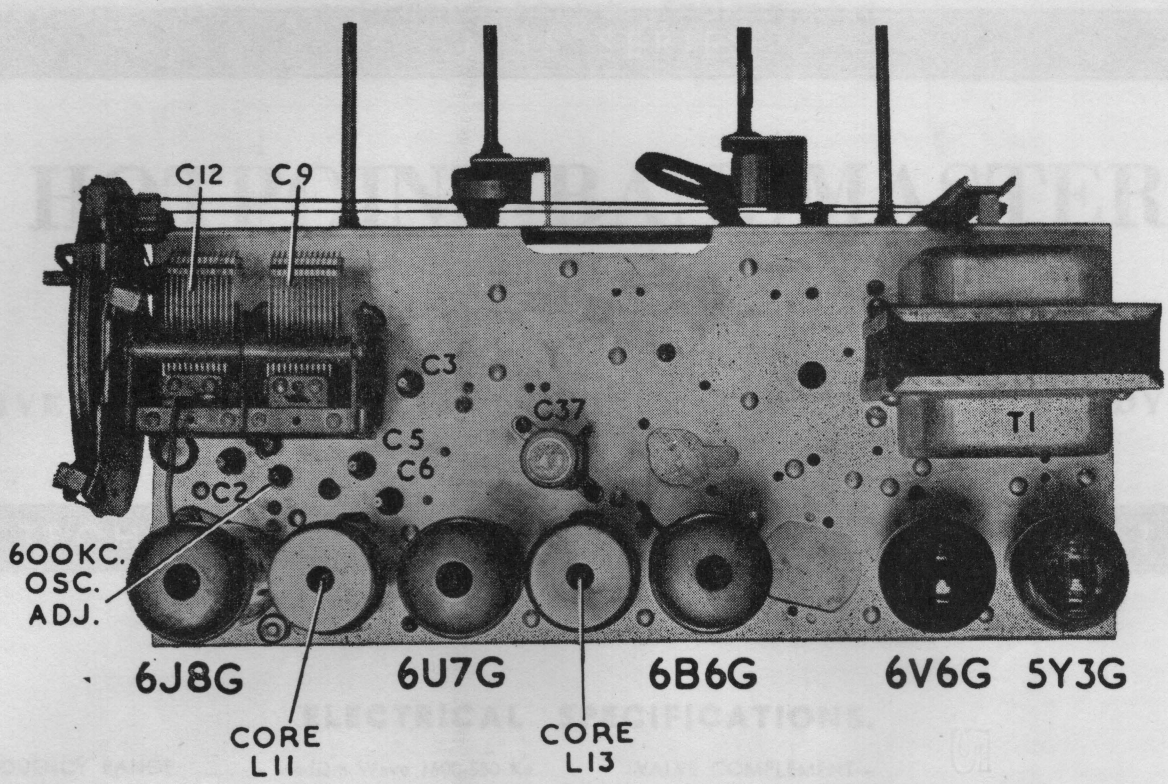
Order	Connect "high" side of Generator to:	Tune Generator to:	Set Receiver Drive Drum Scale to:	Adjust for Maximum peak output:
1	6J8G Grid*	455 Kc.	0	L13 Core
2	6J8G Grid*	455 Kc.	0	L12 Core
3	6J8G Grid*	455 Kc.	0	L11 Core
4	6J8G Grid*	455 Kc.	0	L10 Core
	Repeat the above adjustments until the maximum output is obtained			
5	Aerial Term	600 Kc.	18	L.F. Osc. Core Adj. (L7)†
6	Aerial Term	1500 Kc.	154	H.F. Osc. Adj. (C5)
7	Aerial Term	1500 Kc.	154	H.F. Aer. Adj. (C2)
	Repeat Adjustments 5, 6 and 7			
8	Aerial Term	20 Mc.	157	H.F. Osc. Adj. (C6)‡
9	Aerial Term	20 Mc.	157	H.F. Aer. Adj. (C3)§

* With grid clip connected. A 0.001 uF capacitor should be connected in series with the "high" side of the test instrument.

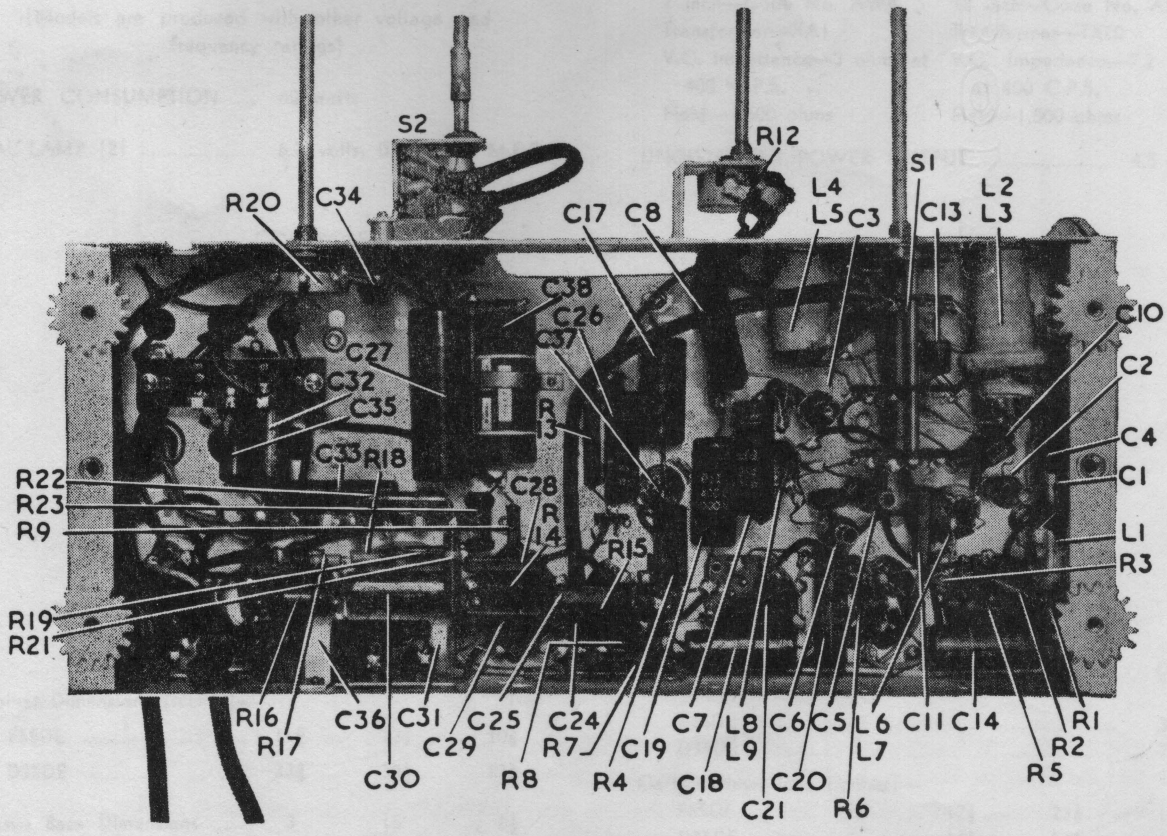
† Rock the tuning control back and forth through the signal.

‡ Use minimum capacity peak if two can be obtained. Check to determine that C6 has been adjusted to correct peak by tuning the receiver to approximately 19.09 Mc., where a weaker signal should be received.

§ Use maximum capacity peak if two can be obtained.



CHASSIS (TOP VIEW).



NOTE: The I.F. transformer primary cores are adjusted from underneath the chassis.

CHASSIS (UNDERNEATH VIEW).

Loudspeaker Service.

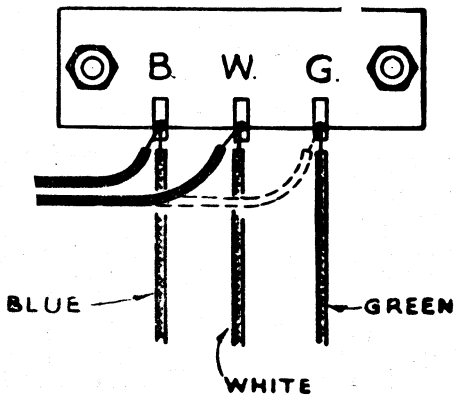
It is inadvisable to attempt loudspeaker repairs other than adjustment of the voice coil and replacement of the transformer. The fitting of a new cone or the replacement of a field winding should be done only by Service Departments suitably equipped to do the work.

To centre the voice coil first remove the dust cover. To do this, use a very sharp razor blade and cut the centre out of the dust cover, cutting just inside the edge of the voice coil former, which can be felt with the finger. Do not attempt to tear the cover from the cone. Loosen the suspension screws, insert three narrow paper "feelers" in the gap and re-tighten the suspension screws. The "feelers" should be approximately 3/16 inch wide and 0.006 inch thick.

After adjusting, test the loudspeaker, and, if satisfactory, fasten a replacement dust cover, part number 7677, in place with latex rubber cement.

Connection to Power Supply.

The receiver should not be connected to any circuit supplying other than alternating current from 200 to 260 volts and at the frequency stated on the label within the cabinet. The power supply connection panel is shown in the accompanying diagram, and for 230 to 260-volt operation the input leads from the power switch (S2) should be connected to tags B and G. For operation on voltages below 230 connection should be made to tags B and W.



"Service Window."

A "Service Window" is provided in the base of the table model cabinet. The "Window" is normally covered with a perforated grille fastened by four knurled nuts. With the grille removed, it is possible to perform most servicing operations without removing the chassis from the cabinet.

Chassis Removal and Replacement.

(1) Remove the control knobs. The knobs on the front of the cabinet are each held by a set screw. To remove the Tuning Control knob at the side of the cabinet, proceed as follows:—

Table Model: The knob pulls straight off.

Console Model: Loosen the screws in the spindle coupling and part the spindle.

(2) Disconnect the pointer from the dial drive cord, by unscrewing the thumb nut, and disconnect the cable from the loudspeaker. Also, disconnect the yellow and black dial lamp leads from the chassis.

(3) Four bolts hold the chassis in the cabinet. Remove these and withdraw the chassis.

On replacing the chassis in the cabinet, care must be taken to connect the dial pointer to the dial drive cord correctly, as follows:—

(1) Turn the Tuning Control fully anti-clockwise.

(2) Bring the dial pointer to a position opposite a setting mark on the dial scale, below, and approximately 1/16 inch to the left of 2CR.

(3) Connect the pointer to the top drive cord and tighten the thumb-screw.

SOCKET VOLTAGES AND CURRENTS

Valve	Cathode to Chassis Volts	Control Grid to Chassis Volts	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current mA	Heater Volts
6J8G Converter, M.W.	0	-3*	75	250	1.0	6.3
S.W.	3	0	75	250	1.2	6.3
Oscillator	—	—	—	115	5.0	—
6U7G I.F. Amplifier	0	-3*	75	250	6.0	6.3
6B6G Detector	0	0	—	100*	0.5	6.3
6V6GT/G Output	13	0	250	230	45	6.3
5Y3GT/G Rectifier				350 AC		5.0

Total H.T. Current — 70 mA.

* These readings may vary, depending on the resistance of the voltmeter used.

Voltages and currents measured at 240 volts A.C. supply. No signal input. Volume Control, maximum clockwise. Voltmeter, 1,000 ohms per volt. Measurements taken on highest scale, giving accurate readable deflection.

D.C. RESISTANCE OF WINDINGS.

Winding	D.C. Resistance in ohms
Aerial Coil (M.W.)—	
Primary (L2)	10.5
Secondary (L3)	3.5
Aerial Coil (S.W.—	
Primary (L4)	2
Secondary (L5)	*
Oscillator Coil (M.W.)—	
Primary (L6)	1
Secondary (L7)	6
Oscillator Coil (S.W.)—	
Primary	*
Secondary	*
I.F. Transformer Windings	7.5
I.F. Filter (L1)	17.5†
Power Transformer (T1)—	
Primary	16
Secondary	500
Loudspeaker Input Transformer (T2)—	
XA1 Primary	500
XA1 Secondary	*
TX20 Primary	420
TX20 Secondary	*

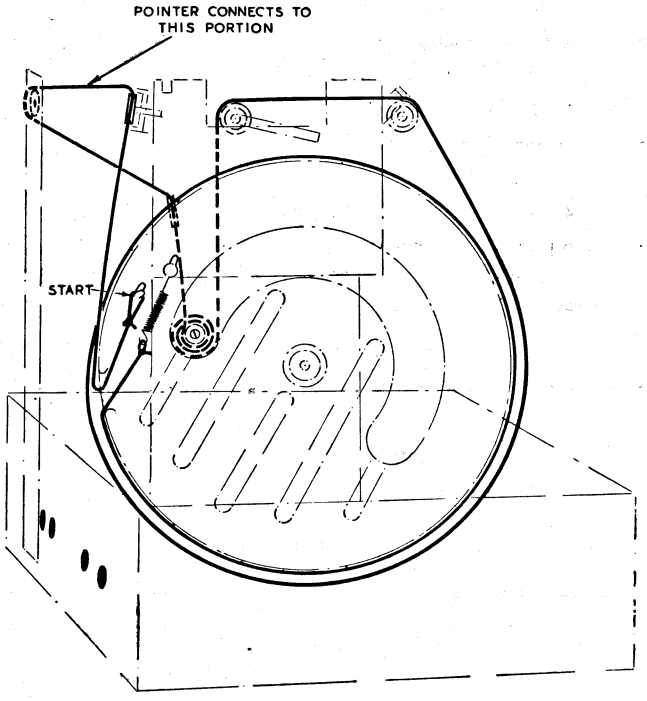
The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

* Less than 1 ohm.

† In some receivers this reading may be as high as 60 ohms.

Tuning Drive Cord Replacement.

The accompanying diagram shows the route of the cord and the method of attachment. Whilst fitting the cord, keep it taut and adjust the length so that the tension spring measures approximately 2 inches long when fitted. The spring should be sheathed to prevent it from rattling against the drum.

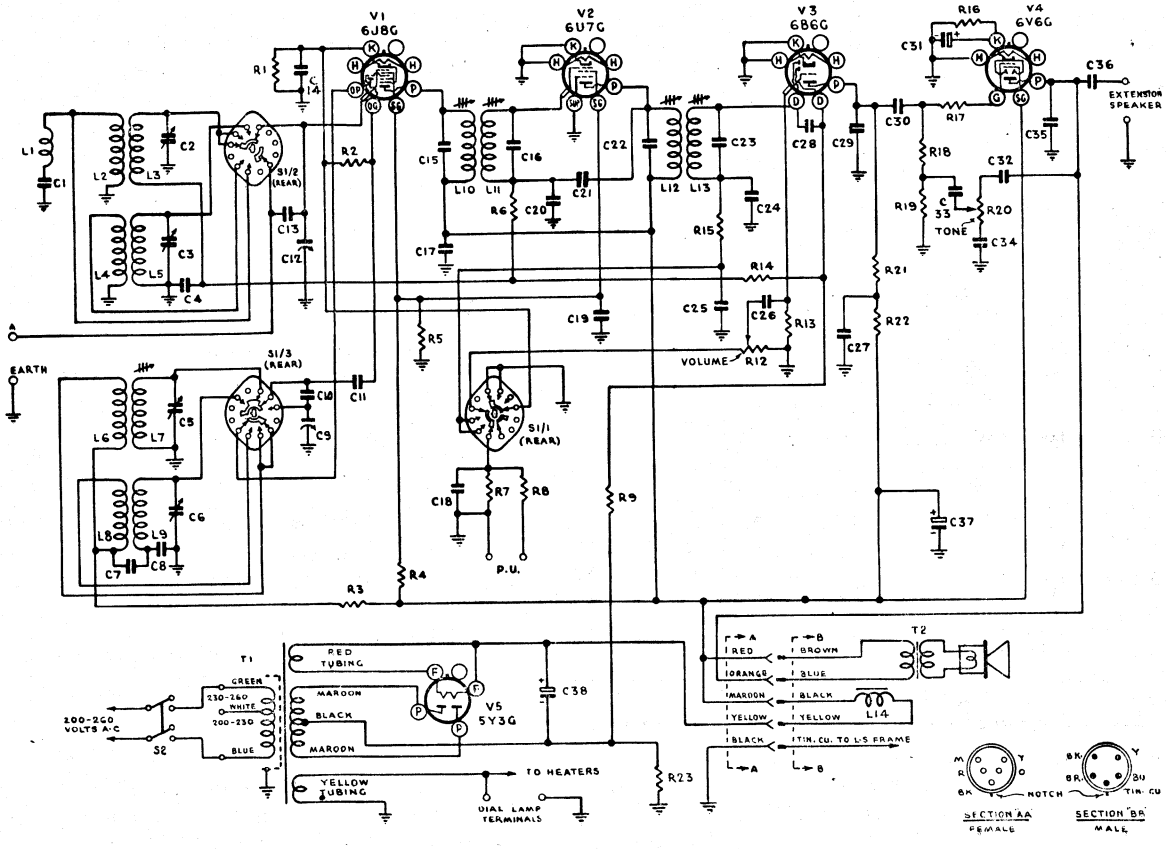


MECHANICAL REPLACEMENT PARTS.

Item	Part No.
Cabinet, console	D3
Cabinet, table	F5
Cable, loudspeaker—	
Console Model	6465
Table Model	17822
Cable, pick-up	19036
Cable, power	209
Cable, Volume Control	7328
Chassis end	8411
Clip, grid	7459
Cone Assembly, loudspeaker—	
Type AW4	9356
Type AS13	7071
Dial frame assembly	19622
Dial Scale	19033
Drum, drive	9090

Item	Part No.
Dust cover, loudspeaker	7677
Mount plate assembly, tuning drive	19011
Pulleys, brass	1730
Screen, I.F. Transformer	3351
cap	8372
Screen, valve	8147
cap	8148
register	4733
Socket, valve	4704
Socket, valve, cushion	7326
Spindle, tuning drive	19012
Spring, drive tension	6641
Strip, tag, 1-way	7628
3-way	4251
7-way	9879

CIRCUIT DIAGRAM



CIRCUIT CODE

Circuit Code No.	Description	Stock Code or Part No.
	INDUCTORS.	
L1	I.F. filter choke (including C1)	9382
L2, L3	Aerial coil, 550-1600 Kc.	7974
L4, L5	Aerial coil, 7-22 Mc.	9569
L6, L7	Oscillator coil, 550-1600 Kc.	9206
L8, L9	Oscillator coil, 7-22 Mc.	9205
L10, L11	1st I.F. transformer	8286-Z, 8282*
L12, L13	2nd I.F. transformer	8287-Z, 8281*
L14	Loudspeaker field coil, 1500 ohms	
	CAPACITORS.	
C1	50 uuF silvered mica	226, 155
C2	2-20 uuF air trimmer	3661
C3	6-24 uuF air trimmer	5435A
C4	0.05 uF paper, 400 V. working	228, 115
C5	11-29 uuF air trimmer	3411B
C6	2-10 uuF air trimmer	3658
C7	0.05 uF paper, 400 V. working	228, 115
C8	4000 uuF mica ± 2½% (padder)	13213†
C9	12-430 uuF variable tuning (ganged)	19010
C10	490 uuF mica ± 2½% (padder)	13212†
C11	70 uuF mica	13211†
C12	12-430 uuF variable tuning (ganged)	19010
C13	4 uuF mica	224, 233
C14	0.1 uF paper, 400 V. working	228, 121
C15	70 uuF silvered mica	226, 460
C16	70 uuF silvered mica	226, 460
C17	0.1 uF paper, 400 V. working	228, 121
C18	0.01 uF paper, 600 V. working	228, 301
C19	0.1 uF paper, 400 V. working	228, 121
C20	0.01 uF paper, 600 V. working	228, 301
C21	4 uuF mica	224, 233
C22	70 uuF silvered mica	226, 460
C23	70 uuF silvered mica	226, 460
C24	110 uuF mica	13211†
C25	110 uuF mica	13211†
C26	0.01 uF paper, 600 V. working	228, 301
C27	0.5 uF paper, 400 V. working	228, 135
C28	50 uuF mica	224, 255
C29	200 uuF mica	224, 267
C30	0.02 uF paper, 600 V. working	228, 307
C31	25 uF, 40 P.V. electrolytic	ET10769
C32	0.05 uF paper, 400 V. working	228, 115
C33	1500 uuF mica	13213†
C34	0.005 uF paper, 600 V. working	228, 295
C35	0.0025 uF paper, 600 V. working	228, 289
C36	0.5 uF paper, 400 V. working	228, 115
C37	16 uF, 525 P.V. electrolytic	ET10783
C38	8 uF, 525 P.V. electrolytic	EE1015
	RESISTORS.	
R1	320 ohms, ½ watt	600, 271
R2	50,000 ohms, ½ watt	600, 315
R3	25,000 ohms, 1 watt	600, 509 or 600, 709
R4	25,000 ohms, 2 watts (2 x 50,000 ohms, 1 watt in parallel)	600, 515 or 600, 715
R5	20,000 ohms, 1 watt	600, 507 or 600, 707
R6	0.1 megohm, ½ watt	600, 521 or 600, 721
R7	50,000 ohms, ½ watt	600, 315
R8	20,000 ohms, ½ watt	600, 307
R9	2.5 megohms, ½ watt	600, 349
R10	Not used	
R11	Not used	
R12	0.5 megohm volume control	7263
R13	10 megohms, 1 watt	600, 561 or 600, 761
R14	1.6 megohms, ½ watt	600, 345
R15	50,000 ohms, ½ watt	600, 315
R16	250 ohms, 3 watts W.W.	602, 369
R17	50,000 ohms, ½ watt	600, 315
R18	0.4 megohms, ½ watt	600, 333
R19	0.1 megohm, ½ watt	600, 321
R20	0.1 megohm tone control	19621
R21	0.25 megohm, 1 watt	600, 529 or 600, 729
R22	20,000 ohms, 1 watt	600, 507 or 600, 707
R23	40 ohms, 3 watts	602 353
	TRANSFORMERS.	
T1	Power transformer, 50-60 C.P.S.	11344A
	Power transformer, 40 C.P.S.	11346A
T2	Loudspeaker transformer (table model)	XA1
	Loudspeaker transformer (console model)	TX20
	SWITCHES.	
S1	Phono-range, 3 wafer, rotary	9804
	wafer 1	9804/1
	wafer 2	9804/2
	wafer 3	9804/3
	(NOTE: Wafers numbered from front of chassis)	
S2	Power switch, D.P.S.T., rotary	20007

* Part number of winding only.

† Capacitance and tolerance (if shown) to be quoted.