

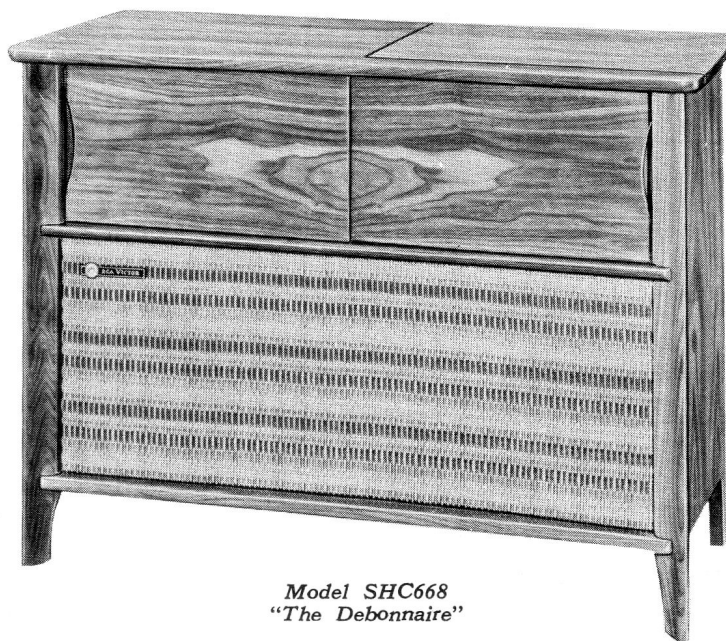


RCA VICTOR



STEREO-HIGH FIDELITY COMBINATION MODEL SHC 668 "THE DEBONNAIRE"

SERVICE DATA



Model SHC668
"The Debonnaire"

ELECTRICAL AND MECHANICAL SPECIFICATIONS

TUNING RANGE

Standard Broadcast (AM) 540-1,600 kc.

INTERMEDIATE FREQUENCIES 455 kc.

TUBE COMPLEMENT

Symbol	Type	Function
V-1	ECC85(6AQ8)	FM-RF Amplifier — Mixer Oscillator
V-2	ECH81(6AJ8)	AM — Mixer Oscillator/FM I.F. Amplifier
V-3	EBF89(6DC8)	I.F. Amplifier/AM Detector
V-4	RCA6CG7	1st. Audio Amplifier
V-5	RCA6CG7	2nd. Audio Amplifier
V-6	EM84	Tuning Indicator
—Power Amplifier—		
V-101	RCA6CG7	Left and Right AF Amplifier
V-102	RCA6BQ5	Left Channel Audio Output
V-103	RCA6BQ5	Right Channel Audio Output
V-104	RCA6CA4	Rectifier

POWER SUPPLY RATING

115 volts, 60 cycles, 145 watts (includes record changer)

TUNING DRIVE RATIO 19:1 (9 1/2 turns of knob)

RECORD CHANGER—Garrard "210"

Turntable Speed 16 2/3, 33 1/3, 45 or 78 r.p.m.

Record capacity Up to fifteen 7 inch or
twelve 10 inch or
ten 12 inch or
ten 10 inch and 12 inch intermixed

AUDIO POWER OUTPUT (MAX.) 30 watts (peak)

FREQUENCY RESPONSE 45 cycles to 20,000 cycles

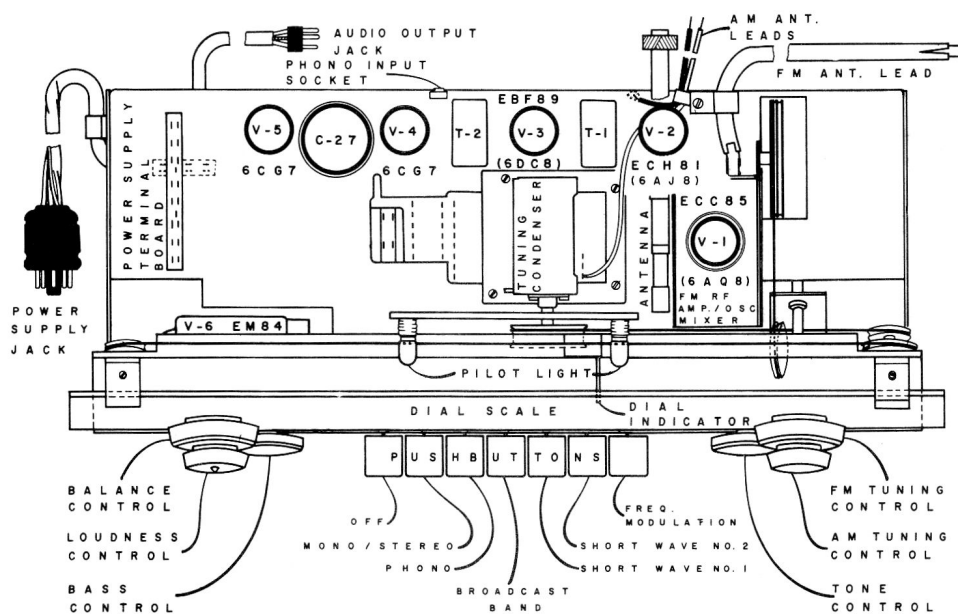
LOUDSPEAKERS

Two 10" PM "woofers" 8 ohms @ 400 cycles

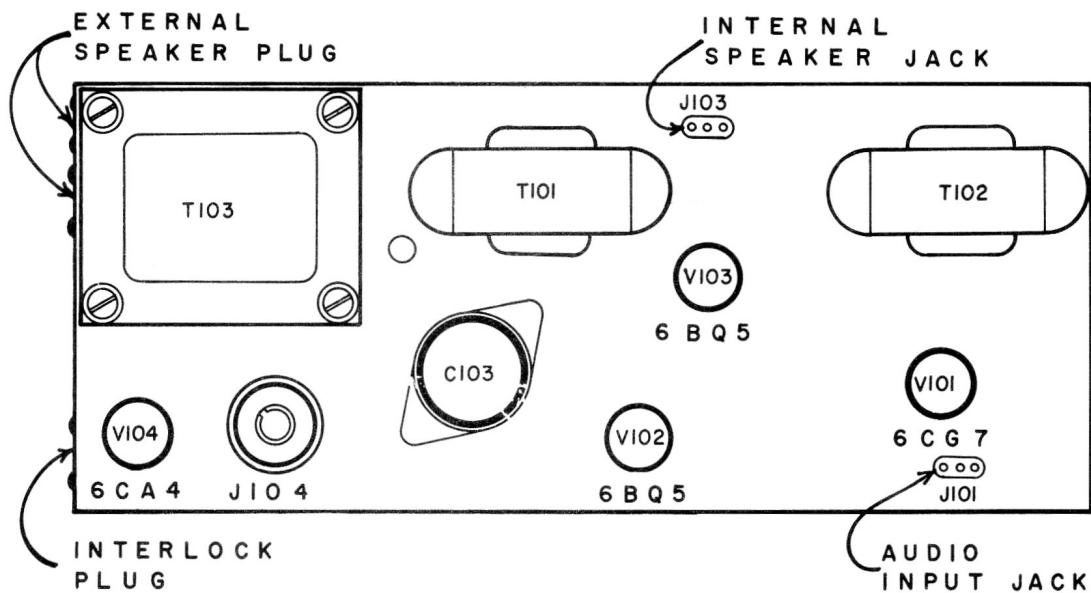
Two 3 1/2" PM "tweeters" 8 ohms @ 3000 cycles

ISSUED BY
SERVICE DIVISION
RCA VICTOR COMPANY, LTD.
MONTREAL, CANADA

—1960 No. 27—



Chassis Layout—Showing location of components and alignment test points.



Chassis Layout—Power of Amplifier showing components and connection points.

RECORD PLAYER INFORMATION

For Record Player Information
Refer To
SERVICE DATA
GARRARD MODEL "210"
Record Player

Service Data

ISSUE — 1960 No. 14 —

ALIGNMENT PROCEDURE

BC, SW1 & SW2 Alignment (AM)Alignment Indicators:

RCA Voltomyst on equivalent VTVM.

Sig. Generator:

Connect ground side of signal generator to receiver chassis, close to point of signal injection. If output measurement is used for AM alignment, the output of the signal generator should be kept as low as possible to avoid AVC action.

AM-IF Alignment:

SW2 pushbutton pressed down - Vol. control max. - Tone controls center - Signal generator at 460 Kc, 30% modulation.

Steps	Connect high side of sig. gen. to	Set AM dial pointer to	Adjust for max.
1	pin #2 of V3 (EBF89) in series with .01 mfd	quiet point	T-2/460 Kc Bottom (sec) Top (prim)
2	pin #2 of V2 (ECH81) in series with .01 mfd	" "	T-1/460 Kc Bottom (sec) Top (prim)
3	pin #2 of V2 (ECH81) in series with .01 mfd	" "	T-2/460 Kc Bottom (sec) Top (prim) (readjustment)

AM-RF Alignment:

Press down proper pushbutton.

4	Antenna lead in series with 220 mmfd 	SW2 19m or 15.8 Mc	C9 (osc)
5		SW2 42m or 7.15 Mc	L2 (osc)
6		Repeat step 4 for correct frequency alignment.	
7		SW2 19m or 15.8 Mc	C1 (ant)
8		SW2 42 m or 7.15 Mc	L1 (ant)
9		Repeat steps 6 & 7 until maximum gain is obtained.	
10		SW1 49 m or 6.1 Mc	C10 (osc)
11		SW1 130 m or 2.3 Mc	L4 (osc)
12		Repeat step 8 for correct frequency alignment.	
13		SW1 130 m or 2.3 Mc	L3 (ant)
14		BC 1500 Kc	C11 (osc)
15		BC 540 Kc	L6 (osc)
16		Repeat steps 11 & 12 for correct frequency alignment.	
17		BC 1500 Kc	C3 (ant)

FM ALIGNMENT

with sweep generator & oscilloscope (Visual)

FM pushbutton pressed down - Vol. control in minimum - Tone controls in center. Alignment with FM sweep generator and oscilloscope is preferable in order to get the optimum performance.

Use sweep generator with approx. 400 Kc sweep. Couple 10.7 Mc marker oscillator to circuit under alignment.

Steps	Connect high side of sweep generator to	Set sweep gen. on	Set dial on	Connect oscill. to	Adjust		
1	pin 2 of V3 (EBF89) in series with 0.01 mfd ceramic disc cap. with short leads ↓	10.7 Mc ↓	quiet point at low freq. end. ↓	junction of R19, C24 and ground. ↓	top core of T-2 for max. amplitude of slope.		
2					bottom core of T-2 for best linearity and symetry of S-shaped slope		
3					Repeat steps 1 and 2 until optimum is obtained with marker spikes in the center of the slope.		
4	pin 2 of V2 (ECH81) in series with 0.01 mfd ceramic disc cap. and set generator output voltage to get a constant dc voltage of -3V at junction R9, C16 and ground.	97 Mc ↓	97 Mc ↓	junction of R9, C16 and ground. ↓	top core of T-1.		
5	as in step 4				bottom core of T-1. Repeat steps 4 and 5 until best symetry and max. ampl. is obtained.		
6	through 120 ohms to one wire of FM antenna line. Ground side through 150 ohms to other wire of FM antenna line. Set for max. generator output.				top and bottom core of T-O(in FM tuner) for max. amplitude & symetry. This is only a preliminary alignment.		
7	as in step 6 but use only such a sweep gen. output voltage as is necessary to produce -3V dc at junction of R9, C16 and ground. ↓				97 Mc	97 Mc	C201 (FM osc. tr.) for max. amplitude.
8					108 Mc	108 Mc	C203 (FM rf. tr.) for max. amplitude.
9		Check calibr. & tracking. If necessary, readjust C201 and C203 to compromise with 97 Mc calibration.					
10		88 Mc	88 Mc	Check calibration & tracking. L alignment is possible by changing positioning of brass wheel on tuner shaft(below B+ terminals of FM tuner), but is not recommended.			
11		97 Mc	97 Mc	tune for symetrical curve and readjust top and bottom cores of T-O for optimum.			

AM SUPPRESSION:

	to FM antenna leads through 120 and 150 ohms resistors. Switch to 30% AM modulation.	97 Mc or other	97 Mc or other	Turn up Volume control until AM signal in connected speaker is audible.	var. resistor R23 (close to T-2) for minimum AM signal.
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Notes: Adjust neutralization trimmer C202 in FM tuner only if oscillations occur.

FM ALIGNMENT

with FM generator and VTVM

An alignment of FM circuit is possible by using a normal FM generator and a voltohmyst or similar VTVM as shown in the following table, but the visual alignment should be used with preference whenever a FM sweep generator is available.

FM pushbutton pressed down - Volume control at minimum - Tone controls in center.

Steps	Connect high side of signal generator to	Set sign. gen. to	Set dial to	Adjust
1	pin 2 of V3 (EBF89) in series with .01 mfd ceramic disc capacitor with short leads.	10.7 Mc ↓	quiet point at low freq. end. ↓	
2	Connect Voltohmyst across R54. Adjust sig. gen. output to give approx. -3V dc on Voltohmyst if core adjusted.			T-2 top core for max. DC voltage across R54.
3	Connect Voltohmyst across C25 and the center of 2 matched artificial balancing resistors (47K) across R54.			T-2 bottom core for 0 volt DC.
4	Connect Voltohmyst across C16. Adjust sig. gen. to give -3V dc.			
5	pin 2 of V2 (ECH81) in series with .01 mfd.			T-1 top & bottom core with 10 Kc damping resistor in parallel to the not tuned coil (use short leads on resistors).
6	through 120 ohms to one wire of FM antenna line. Ground side through 150 ohms to other wire of FM antenna line.	97 Mc ↓	97 Mc ↓	C201 (FM osc. tr.) for max. voltage across C16.
7		↓	↓	C203 (FM rf. tr.) for max. voltage across C16.
8				Check for calibration accuracy and tracking. If necessary, readjust C201 and C203 to compromise with 97 Mc calibration.
9		88 Mc	88 Mc	Check calibration and tracking. L alignment is possible by changing positioning of brass wheel on tuner shaft (below B+ terminals of FM tuner), but is not recommended.
10	Alignment of IF transformer T-O by the meter method does not give exact curve shape and should be avoided if ever possible.			

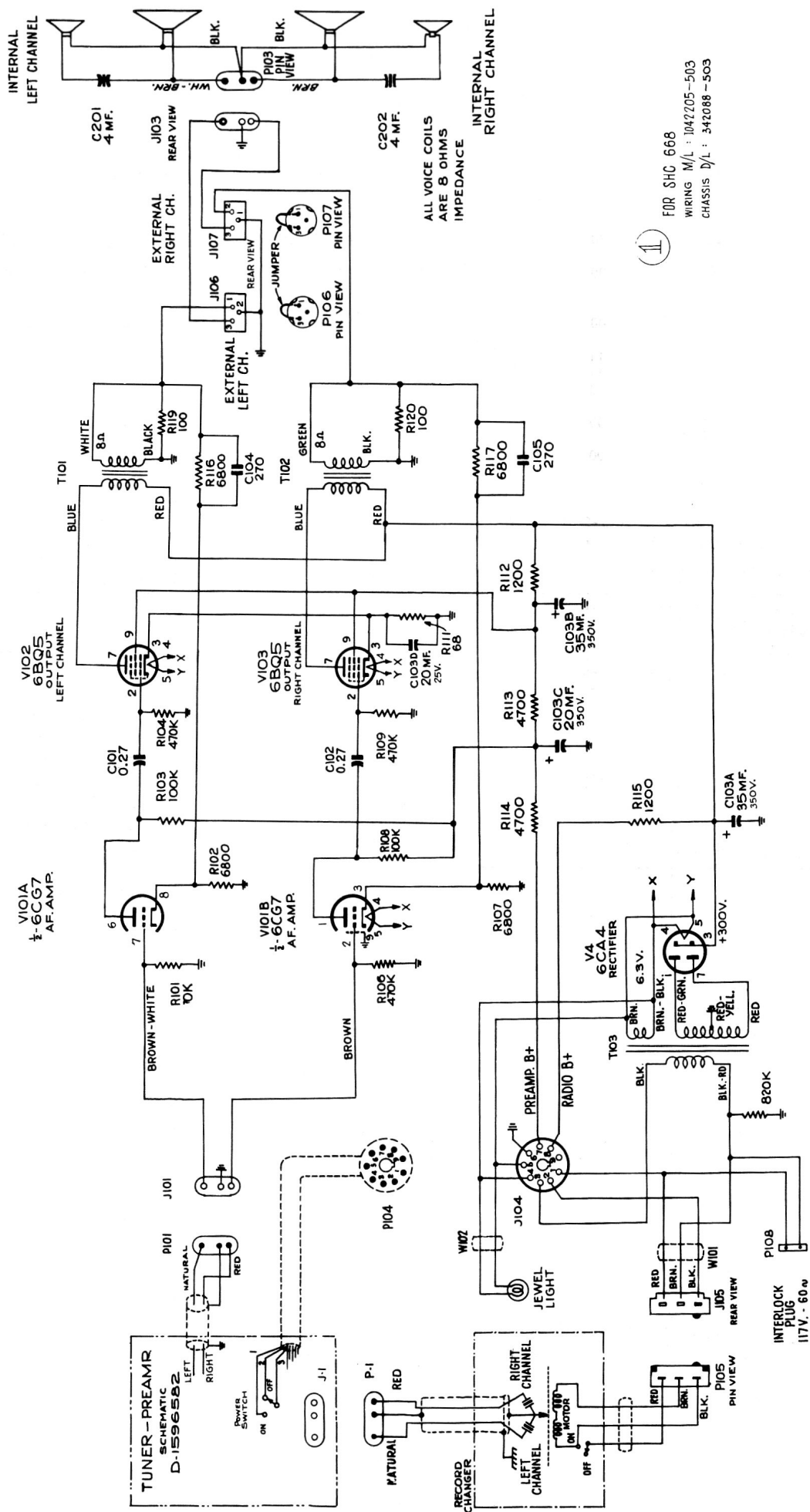
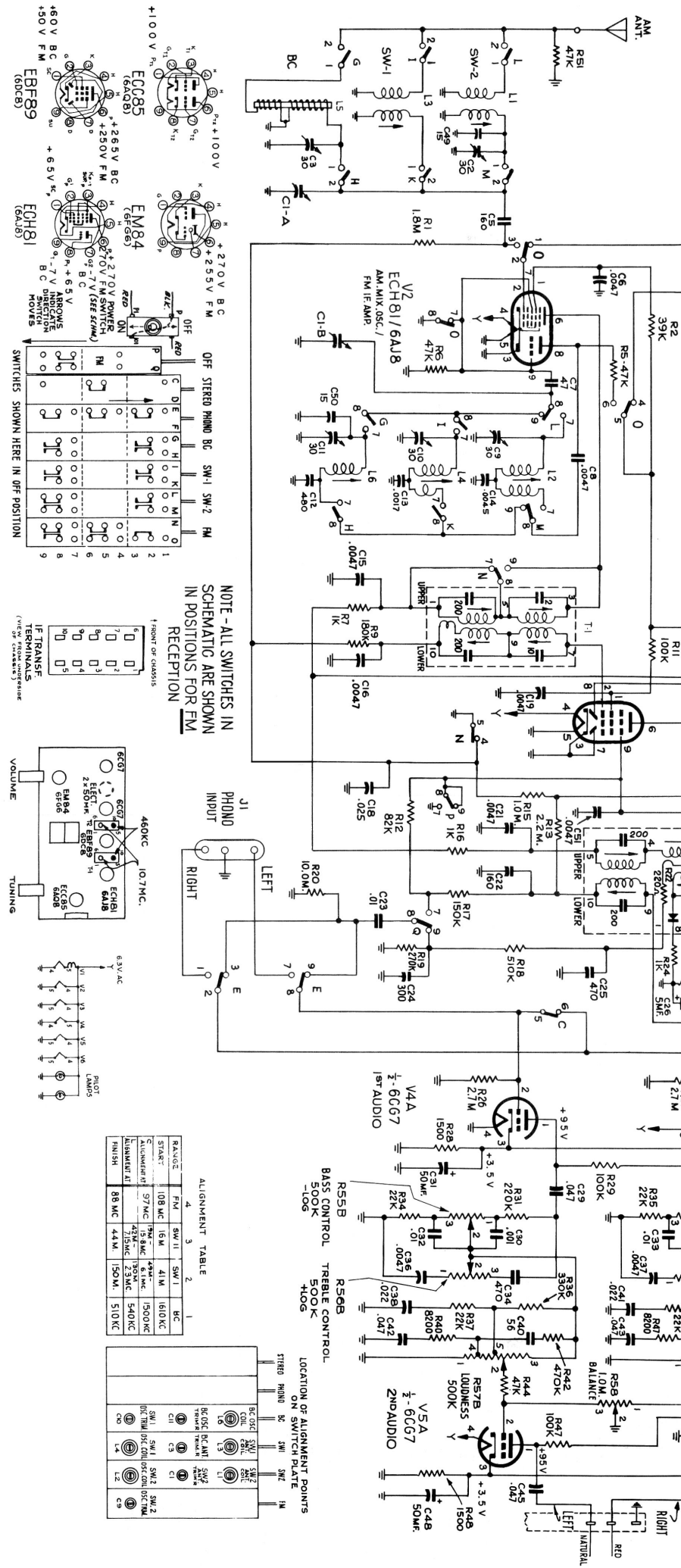


Fig. 3—Power - Audio Amplifier Schematic Diagram



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REPLACEMENT PARTS LIST

Insist on Genuine Factory Tested Parts, which are readily identified and may be purchased from Authorized Dealers.

SYMBOL	STOCK NO.	DESCRIPTION	SYMBOL	STOCK NO.	DESCRIPTION
C-1	*63-24709	Capacitor-Variable Capacitor	R-7		Resistor-1000 ohms, 1/4W
C-2	*63-24710	Capacitor-Adjustable Trimmer	R-8		
C-3	*63-24710	Capacitor-Adjustable Trimmer	R-9		Resistor-180000 ohms, 1/4W
C-4			R-10		Resistor-2700 ohms, 1W
C-5		Capacitor-Styroflex-160 mmf. 20%, 125V	R-11		Resistor-100000 ohms, 1/4W
C-6		Capacitor-Styroflex-.0047 mfd.	R-12		Resistor-82000 ohms
C-7		Capacitor-Styroflex- 47 mmf. 10%, 125V	R-13		Resistor-2.2 megohms
C-8		Capacitor-Styroflex-.0047 mfd. 10%, 400V	R-14		
C-9	*63-24710	Capacitor-Adjustable Trimmer	R-15		Resistor-1.0 megohms, 1/4W
C-10	*63-24710	Capacitor-Adjustable Trimmer	R-16		Resistor-1000 ohms, 1/4W
C-12		Capacitor-Styroflex-480 mmf. 3.5%, 125V	R-17		Resistor-150000 ohms, 1/4W
C-13		Capacitor-Styroflex-.0047 mfd. 2.5%, 500V	R-18		Resistor-510000 ohms, 1/4W
C-14		Capacitor-Styroflex-.0045 mfd. 2.5%, 500V	R-19		Resistor-270000 ohms, 1/4W
C-15		Capacitor-.0047 mfd.	R-20		
C-16		Capacitor-.0047 mfd.	R-21		
C-17		Capacitor-Electrolytic-8 mfd.	R-22		Resistor-220 ohms
C-18		Capacitor-.025 mfd. 20%, 250V	R-23	*63-24722	Central-FM Compensating - 4000 ohms, 2W
C-19		Capacitor-.0047 mfd.	R-24		Resistor-1000 ohms
C-20		Capacitor-.005 mfd. 20%, 250V	R-25		
C-21		Capacitor-.0047 mfd.	R-26		Resistor-2.7 megohms, 1/4W
C-22		Capacitor-160 mmf. 20%, 125V	R-27		Resistor-2.7 megohms, 1/4W
C-23		Capacitor-.01 mfd. 20%, 250V	R-28		Resistor-1500 ohms, 1/4W
C-24			R-29		Resistor-120000 ohms, 1/4W
C-25		Capacitor-470 mmf. 20%, 125V	R-30		Resistor-120000 ohms, 1/4W
C-26	*63-24711	Capacitor-Electrolytic-5 mfd.	R-31		Resistor-220000 ohms, 1/4W
C-27A, } C-27B }	*63-24712	Capacitor-Electrolytic-50x50 mfd. 500/550V	R-32		Resistor-220000 ohms, 1/4W
C-28		Capacitor-.047 mfd. 20%, 250V	R-33		
C-29		Capacitor-.047 mfd. 20%, 250V	R-34		Resistor-22000 ohms, 1/4W
C-30		Capacitor-.001 mfd. 10%, 500V	R-35		Resistor-22000 ohms, 1/4W
C-31	*63-24713	Capacitor-Electrolytic-50 mfd. 12V	R-36		
C-32		Capacitor-.01 mfd. 20%, 500V	R-37		Resistor-22000 ohms, 1/4W
C-33		Capacitor-.01 mfd. 20%, 500V	R-38		Resistor-330000 ohms, 1/4W
C-34	*63-24714	Capacitor-Styroflex-470 mmf. 10%, 500V	R-39		Resistor-22000 ohms, 1/4W
C-35		Capacitor-.001 mfd. 10%, 500V	R-40		Resistor-8200 ohms, 1/4W
C-36		Capacitor-.0047 mfd. 20%, 500V	R-41		
C-37		Capacitor-.0047 mfd. 20%, 500V	R-42		Resistor-470000 ohms, 1/4W
C-38		Capacitor-.022 mfd. 20%, 500V	R-43		Resistor-470000 ohms, 1/4W
C-39		Capacitor-470 mmf. 10%, 500V	R-44		Resistor-47000 ohms, 1/4W
C-40	*63-24715	Capacitor-56 mmf. 40V	R-45		
C-41		Capacitor-.022 mfd. 20%, 500V	R-46		Resistor-47000 ohms, 1/4W
C-42		Capacitor-.047 mfd. 20%, 250V	R-47		Resistor-120000 ohms, 1/4W
C-43		Capacitor-.047 mfd. 20%, 250V	R-48		Resistor-1500 ohms, 1/4W
C-44	*63-24715	Capacitor-56 mmf. 40V	R-49		Resistor-120000 ohms, 1/4W
C-45		Capacitor-.047 mfd. 20%, 250V	R-50		
C-46		Capacitor-.047 mfd. 20%, 250V	R-51		
C-47			R-52		Resistor-47000 ohms, 1/4W
C-48	*63-24713	Capacitor-Electrolytic-50 mfd. 15V	R-53		
C-49		Capacitor-15 mmf.	R-54		
C-50		Capacitor-Styroflex-300 mmf.	R-55 } A, B }	*63-24723	Control-Dual Bass Control - 500 K ohms
			R-56 } A, B }	*63-24724	Control-Dual Treble Control - 500 K ohms
L-1	*63-24716	Coil-SW-2 Antenna Coil	R-57 }	*63-24725	Control-Dual Loudness Control - 500 K ohms
L-2	*63-24717	Coil-SW-2 Oscillator Coil	A, B }		
L-3	*63-24718	Coil-SW-1-Antenna Coil	R-58		Control-Balance Control - 1.0 megohm, part of loudness
L-4	*63-24719	Coil-SW-1-Oscillator Coil			
L-5	*63-24720	Coil-B.C. Antenna Ferrite - Complete			
L-6	*63-24721	Coil-B.C. Oscillator Coil			
R-1		Resistor-1.8 megohm, 1/2W	T-1	*63-24726	Transformer-1st IF. Transformer
R-2		Resistor-39000 ohms, 1W	T-2	*63-24727	Transformer-2nd IF. Transformer
R-3		Resistor-15000 ohms,			
R-4		Resistor-30000 ohms,		*63-24735	Assembly-Tuning Eye Socket Assembly
R-5		Resistor-47000 ohms, 1W		*63-24731	Dial-Dial Scale
R-6		Resistor-47000 ohms, 1W		*63-24741	Indicator-Tone Indicator (2 req'd)

* Indicates New Stock Items. Only items listed under stock numbers are available as Replacement Parts.

All parts subject to change or withdrawal without notice.

REPLACEMENT PARTS LIST

Insist on Genuine Factory Tested Parts, which are readily identified and may be purchased from Authorized Dealers.

SYMBOL	STOCK NO.	DESCRIPTION	SYMBOL	STOCK NO.	DESCRIPTION
	*63-24736	Knob	R-119		Resistor-100 ohms, 10%, 2W
	*63-24737	Knob	R-120		Resistor-100 ohms, 10%, 2W
	*63-24738	Knob			
	*63-24739	Knob			
	*63-24740	Knob	T-101	*63-24496	Transformer-Left Audio Output Transformer
	*63-24733	Lamp-Dial Lamp - 7 V - 3 amp.	T-102	*63-24497	Transformer-Right Audio Output Transformer
	*63-24728	Pointer-Dial Pointer - AM	T-103	*63-23551	Transformer-Power Transformer - 60 cycle
	*63-24729	Pointer-Dial Pointer - FM			
	*63-24742	Shaft-Tuning Drive Shaft		63-23567	Assembly-Socket and Lead Ass'y. for Jewel Lamp
	*63-24743	Shaft-FM-Tuning-Shaft		63-24495	Assembly-Socket and Lead Ass'y. for phono-motor
	*63-24734	Socket-Dial Lamp Socket			
	*63-24730	Tuner-FM Tuner		11891	Lamp-Jewel-Light Lamp
	*63-24732	Tuning Assembly-Push-Button/Tuning Assembly		76971	Socket-Tube Socket for 6CA4, 6BQ5, 6CG7
		POWER - AUDIO AMPLIFIER CHASSIS			MISCELLANEOUS ASSEMBLY
C-101		Capacitor-0.27 mfd. 400V			
C-102		Capacitor-0.27 mfd. 400V		63-24502	Back-Back Cover
C-103	63-20521	Capacitor-Electrolytic-35/35/20/20 mfd. x350/350/350/25 volts		63-13453	Board-Antenna Terminal Board
C-201	63-12969	Capacitor-Electrolytic-4 mfd. 10V		63-24129	Cable-Phono Cable
C-202	63-12969	Capacitor-Electrolytic-4 mfd. 10V		62-106992	Clip-Power Cord Retainer Clip
				63-24060	Changer-Automatic Record Player Mechanism
R-101		Resistor-470,000 ohms, 10%, 1/2W		62-12941	Cord-AC Power Cord
R-102		Resistor- 6,800 ohms, 10%, 1/2W		63-22869	Connector-Motor Leads Connector Shell - Male
R-103		Resistor-100,000 ohms, 10%, 1/2W			
R-104		Resistor-470,000 ohms, 10%, 1/2W			
R-105				*63-24500	Manual-Customers Instruction Manual
R-106		Resistor-470,000 ohms, 10%, 1/2W			
R-107		Resistor- 3,300 ohms, 10%, 1/2W		63-22443	Speaker-3-1/2" PM - 8 ohms (2 req'd)
R-108		Resistor-100,000 ohms, 10%, 1/2W		*63-24744	Speaker-10" PM - 8 ohms (2 req'd)
R-109		Resistor-470,000 ohms, 10%, 1/2W			
R-110					
R-111		Resistor- 68 ohms, 10%, 1/2W		63-24498	Plug Assembly-Speaker Plug Ass'y - 2 req'd.
R-112		Resistor- 1,200 ohms, 10%, 1/2W		63-74594	Plug-Male Plug - Interlock
R-113		Resistor- 4,700 ohms, 10%, 1/2W			
R-114		Resistor- 4,700 ohms, 10%, 1/2W			
R-115		Resistor- 1,200 ohms, 10%, 1/2W			
R-116		Resistor- 6,800 ohms, 10%, 1/2W		63-26422	Socket-External Speaker Socket (2 req'd)
R-117		Resistor- 6,800 ohms, 10%, 1/2W			
R-118		Resistor-820,000 ohms, 10%, 1/2W			

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