

SPECIFICATIONS

OVERALL DIMENSIONS:

Height 6"
 Width 10-1/8"
 Depth 5-5/8"
 Shipping Weight 6 Lbs.

ELECTRICAL RATING:

Line Voltage 110-120 volts AC-DC
 Power Consumption 28 watts @ 115-volts

TUNING FREQUENCY RANGE:

540 to 1620 KC

INTERMEDIATE FREQUENCY:

455 KC

ELECTRICAL POWER OUTPUT:

1.75 watts (maximum)

LOUDSPEAKER:

Type Permanent Magnet
 Outside Cone Diameter 4"
 Voice Coil Impedance 3.2 ohms @ 400 C.P.S.
 Magnet Rating68 Oz. Alnico V

TUBES:

NO.	TUBE	FUNCTION
V-1	12SA7	Frequency Converter
V-2	12SK7	I-F Amplifier
V-3	12SQ7	2nd Detector—1st Audio
* V-4	50L6-GT	Power Amplifier
V-5	35Z5-GT	Rectifier

* V-4 in a few late sets is a 50C5.

ALIGNMENT PROCEDURE

Alignment Procedure consists of the steps outlined in the Alignment Chart. Make certain each step is done with a minimum input signal.

Connect output meter to speaker voice coil.

ALIGNMENT CHART

STEP	CONNECT TEST OSC. TC	TEST OSC. SETTING	POINTER SETTING	ADJUST FOR MAX. OUTPUT
1	Mixer Grid & Ground	455 KC	540 KC	Trimmers A, B, C, & D
2	R-F Grid & Ground	1500 KC	1500 KC	Trimmer E
3	R-F Grid & Ground	1500 KC	1500 KC	Trimmer F
4	REPEAT STEPS 2 & 3			
5	Check Stationizing. Adjust pointer so that all stations tune correctly.			

GENERAL INFORMATION

Model 100-A is a superheterodyne receiver employing four tubes plus one rectifier. It is for operation on AC or DC current and is housed in a plastic table model cabinet of walnut, ivory, or maroon design.

SPECIAL SERVICE INFORMATION

STAGE GAIN MEASUREMENTS:

Measurements taken with Volume Control maximum and A.V.C. shorted out.

Standard Output—50 milliwatts
 Dummy Antenna—200 Mmf.
 Converter Grid to 1st I-F Grid 71X at 1000 KC
 Converter Grid to 1st I-F Grid 78X at 455 KC
 1st I-F Grid to 2nd Detector 77X at 455 KC
 Overall Audio Gain 20 milliwatts in for 50 milliwatts out.

D.C. RESISTANCE MEASUREMENTS:

1st I-F Coil:
 Primary 17.5 ohms
 Secondary 17.5 ohms
2nd I-F Coil:
 Primary 14.5 ohms
 Secondary 14.5 ohms
Oscillator Coil:
 Primary 1.2 ohms
 Secondary 4.5 ohms

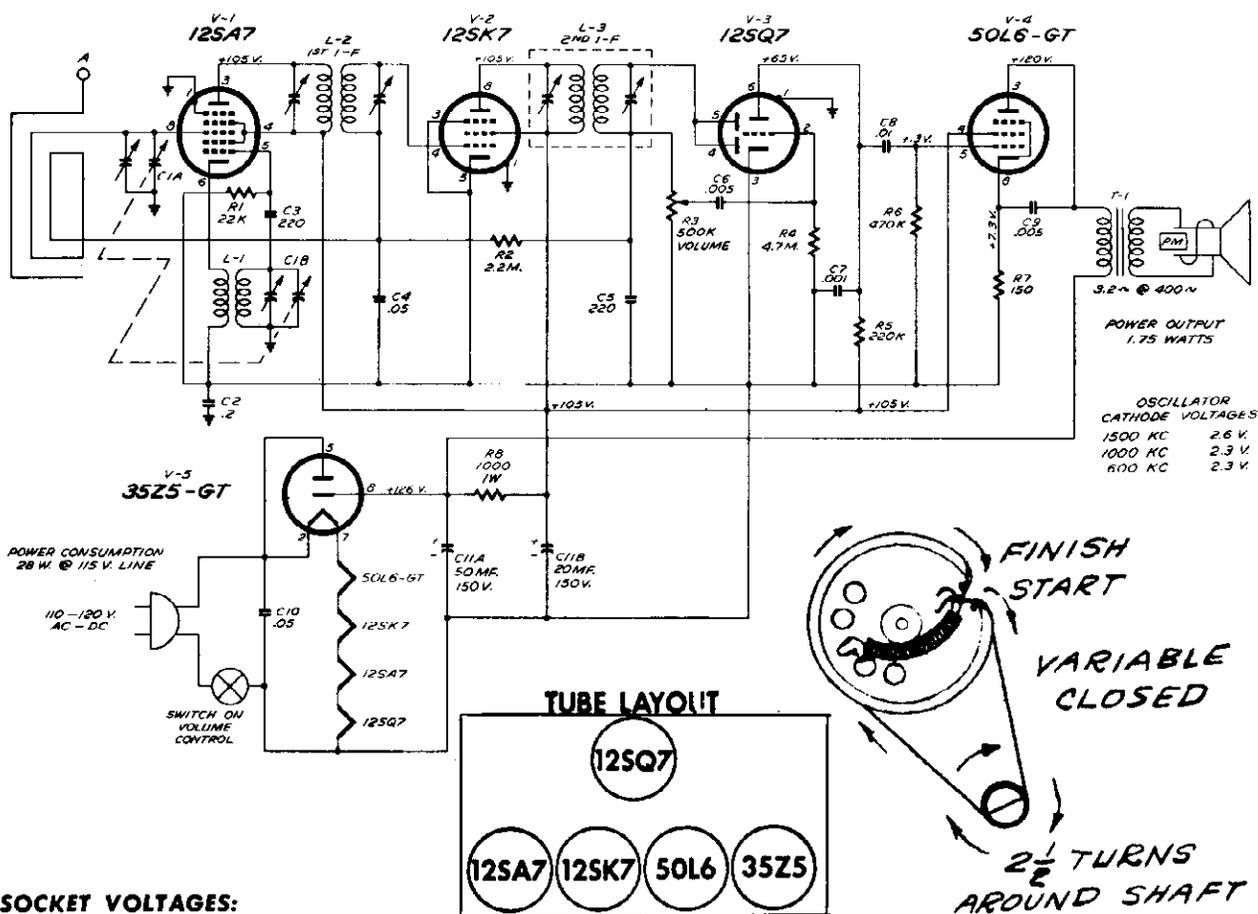
Due to the variation of winding methods, the D.C. resistance measurements shown are subject to a 20% tolerance.

OSCILLATOR CATHODE VOLTAGES:

The following voltages were measured at 117 volts AC line with an A.C. vacuum tube voltmeter input loading above 10 megohms.

1500 KC 2.3 VAC
 1000 KC 2.0 VAC
 600 KC 2.6 VAC

MODEL 100-A

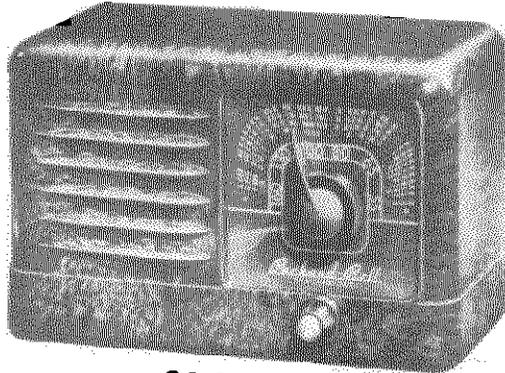


SOCKET VOLTAGES:

The socket voltages shown in the schematic diagram were measured as follows:
 D.C. voltages measured with a vacuum tube voltmeter . . . A.C. voltages measured with a 1,000 ohms per volt A.C. meter
 . . . all voltages shown are positive D.C. and were measured from socket contacts to negative buss unless otherwise specified.

TABLE OF REPLACEABLE PARTS

REF. SYMBOL	DESCRIPTION	PB PART NO.	REF. SYMBOL	DESCRIPTION	PB PART NO.
CAPACITOR, TUBULAR,			RESISTORS, 1/2 WATT, 20%,		
C-7	.001 Mfd. 600 volt	23001	R-5	220,000 ohms	73153
C-6, 9	.005 Mfd. 600 volt	23004	R-6	470,000 ohms	73157
C-4, 10	.05 Mfd. 200 volt	23017	R-2	2.2 megohms	73165
C-2	.2 Mfd. 200 volt	23018	R-4	4.7 megohms	73169
C-8	.01 Mfd. 600 volt	23022	RESISTORS, 1 WATT, 10%,		
CAPACITOR, VARIABLE,			R-8	1,000 ohms	73225
C-1A & B	Two Gang	23523E	TRANSFORMER,		
CAPACITOR, CERAMIC,			T-1	Output, 2500 to 3.2 ohms	89417
C-3, 5	220 Mmf. 20% GP	23915	MISC. PARTS,		
CAPACITOR, ELECTROLYTIC,			Cabinet (specify color)		
C-11A & B	50-20 Mfd. 150 volt	24041	A.C. Cord		
CONTROL,			Dial, Stationized		
R-3	Volume, 500K w/AC Switch	25014	Handle (specify color)		
COILS,			Knobs (specify color)		
L-2	1st I-F, 455 KC	29045	Dial Crystal		
L-3	2nd I-F, 455 KC	29046	Back Panel (loop Mtg.)		
L-1	Oscillator	29220	Dial Pointer		
	Loop	29331	Tube Socket, Std. Octal		
RESISTOR, 1/2 WATT, 10%,			Tube Socket, 7 Pin miniature		
R-7	150 ohms	73015	-(50C5)		
R-1	22,000 ohms	73041	Speaker, 4" PM		



SPECIFICATIONS

OVERALL DIMENSIONS:

Height 6-7 1/16"
 Width 10-1/8"
 Depth 5-3/8"
 Shipping Weight 8 Lbs.

ELECTRICAL RATING:

Line Voltage 110-120 volts AC-DC
 Power Consumption 28 watts @ 115 volts

TUNING FREQUENCY RANGE:

540 to 1620 KC

INTERMEDIATE FREQUENCY:

455 KC

ELECTRICAL POWER OUTPUT:

1.75 watts (Maximum)

LOUDSPEAKER:

Type Permanent Magnet
 Outside Cone Diameter 4"
 Voice Coil Impedance 3.2 ohms @ 400 C.P.S.
 Magnet Rating68 Oz. Alnico V

TUBES:

NO.	TUBE	FUNCTION
V-1	12SA7	Frequency Converter
V-2	12SK7	I-F Amplifier
V-3	12SQ7	2nd Detector—1st Audio
V-4	50L6-GT	Power Amplifier
V-5	35Z5-GT	Rectifier

ALIGNMENT PROCEDURE

Alignment procedure consists of the steps outlined in the Alignment Chart. Make certain each step is done with a minimum input signal.

Connect output meter to speaker voice coil.

ALIGNMENT CHART

STEP	CONNECT TEST OSC. TO	TEST OSC. SETTING	POINTER SETTING	ADJUST FOR MAX. OUTPUT
1	Mixer Grid & Ground	455 KC	540 KC	A, B, C & D (I-F Trimmers)
2	R-F Grid & Ground	1500 KC	1500 KC	E (Osc. Trimmer)
3	R-F Grid & Ground	1500 KC	1500 KC	F (Ant. Trimmer)
4	REPEAT STEPS 2 & 3			
5	Check Stationizing. Adjust pointer so that all stations tune correctly.			

GENERAL INFORMATION

Model 501 is a superheterodyne receiver employing four tubes plus one rectifier. It is for operation on AC or DC current and is housed in a plastic table model cabinet of walnut, ivory or maroon design.

SPECIAL SERVICE INFORMATION

STAGE GAIN MEASUREMENTS:

Measurements taken with Volume and Tone Controls maximum and A.V.C. shorted out.

Standard Output—50 milliwatts . . .

Dummy Antenna—200 Mmf.

Converter Grid to 1st I-F Grid . . . 71X at 1000 KC

Converter Grid to 1st I-F Grid . . . 78X at 455 KC

1st I-F Grid to 2nd Detector . . . 77X at 455 KC

Overall Audio Gain 20 millivolts in for 50 milliwatts out.

D.C. RESISTANCE MEASUREMENTS:

1st I-F Coil:

Primary 17.5 ohms

Secondary 17.5 ohms

2nd I-F Coil:

Primary 14.5 ohms

Secondary 14.5 ohms

Oscillator Coil:

Primary 1.2 ohms

Secondary 4.5 ohms

Due to the variation of winding methods, the D.C. resistance measurements shown are subject to a 20% variation.

OSCILLATOR CATHODE VOLTAGES:

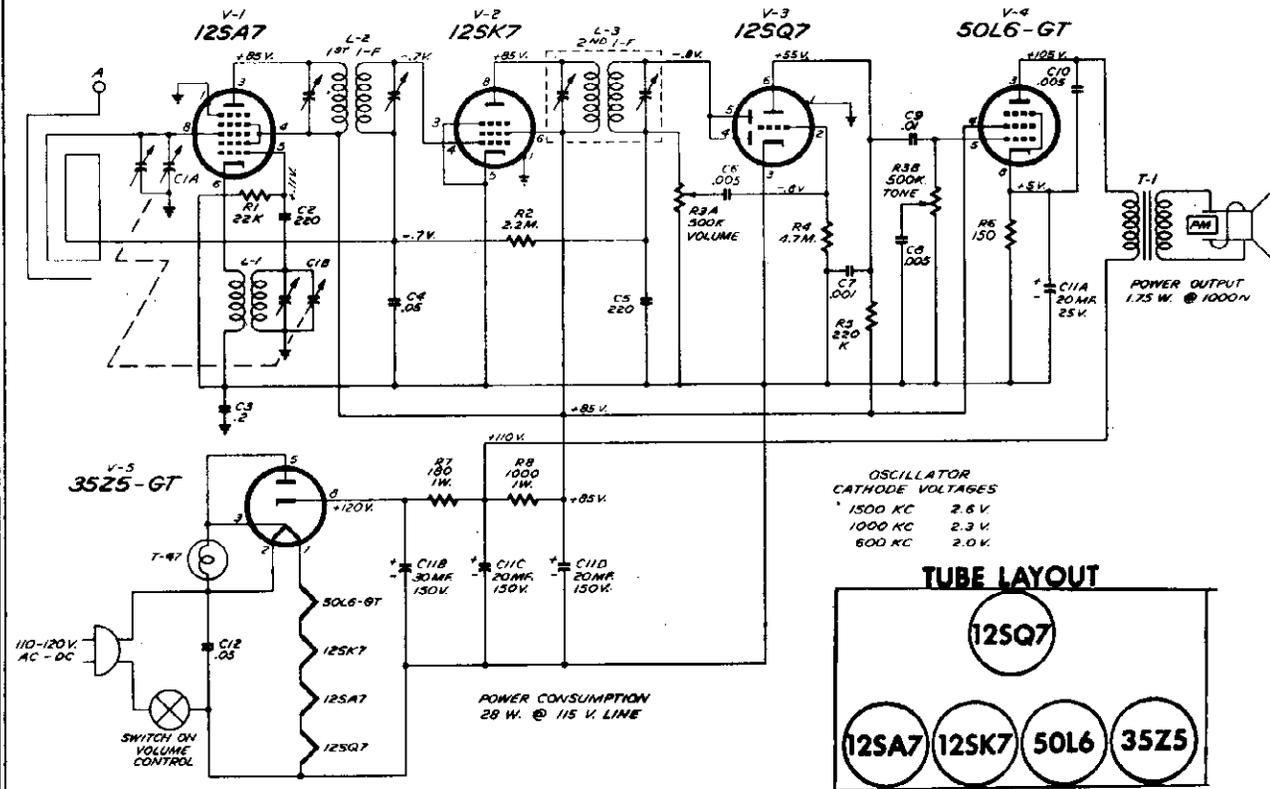
The following voltages were measured at 117 volt AC line with an A.C. vacuum tube voltmeter input loading above 10 megohms.

1500 KC 2.6 VAC

1000 KC 2.3 VAC

600 KC 2.0 VAC

MODEL 501

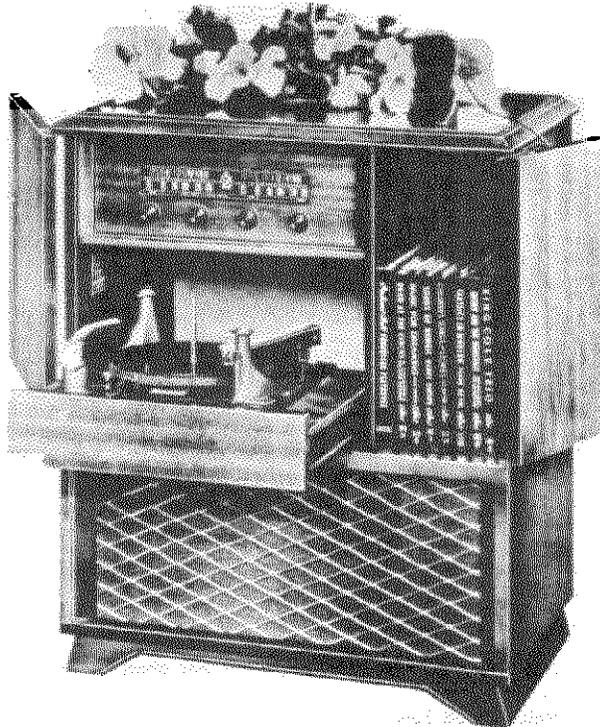


SOCKET VOLTAGES:

The socket voltages shown on the schematic diagram were measured as follows:
 D.C. voltages measured with a vacuum tube voltmeter . . . A.C. voltages measured with a 1,000 ohms per volt A.C. meter
 . . . all voltages shown are positive D.C. and were measured from socket contacts to negative buss unless otherwise specified.

TABLE OF REPLACEABLE PARTS

REF. SYMBOL	DESCRIPTION	PB PART NO.	REF. SYMBOL	DESCRIPTION	PB PART NO.
CAPACITORS, TUBULAR,			RESISTORS, 1/2 WATT, 20%,		
C-7	.001 Mfd. 600 volt	23001	R-5	220,000 ohms	73153
C-6, 10	.005 Mfd. 600 volt	23004	R-2	2.2 megohms	73165
C-4, 12	.05 Mfd. 200 volt	23017	R-4	4.7 megohms	73169
C-3	.2 Mfd. 200 volt	23018	RESISTORS, 1 WATT, 10%,		
C-9	.01 Mfd. 600 volt	23023	R-7	180 ohms	73216
CAPACITORS, VARIABLE,			R-8	1,000 ohms	73225
C-1A & B	2 gang	23528	TRANSFORMERS,		
CAPACITORS, ELECTROLYTIC,			T-1	Output, 2500 to 3.2 ohms	89417
C-2, 5	220 Mmf. 20% GP	23915	MISC. PARTS,		
C-8	.005 Mfd. Hy-Kap	23931	Cabinet (specify color)		
CAPACITOR, ELECTROLYTIC,			A.C. Cord, 6'		
C-11A, B, C, D,	30/20/20-150; 20/25	24034B	Dial, Stationized		
CONTROLS,			Handle (specify color)		
R-3A & B	Dual w/AC Switch—Volume- 500K Tone-500K	25024	Dial Lamp—T-47		
COILS,			Back Panel (Loop Mtg.)		
L-2	1st I-F, 455 KC	29045	Speaker, 4" PM		
L-3	2nd I-F, 455 KC	29046	KNOBS,		
L-1	Oscillator	29220	Tuning (specify color)		
	Loop	29331	Tone (specify color)		
RESISTORS, 1/2 WATT, 10%,			Volume (specify color)		
R-6	150 ohms	73015	SOCKETS,		
R-1	22,000 ohms	73041	Tube, Standard Octal		
			Dial Lamp, Bayonet Base		



GENERAL DESCRIPTION

Model 801 is a PhonOcord console employing seven tubes plus one rectifier. The following are the outstanding features incorporated in this model.

1. Superheterodyne receiver.
2. Automatic Home Recording with Public Address System.
3. Phonograph with Automatic Record Changer.

Cabinet finishes are Walnut, Mahogany, Maple and Modern Blonde Oak.

Service Information concerning the automatic record changer-recorder will be found in "Service Instructions—Automatic Record Changer-Recorder Combination (Packard-Bell Part No. 58004B)". Published in 1946.

SPECIFICATIONS

OVERALL DIMENSIONS:

- Height 35"
- Width 29"
- Depth 18"
- Shipping Weight 110 Lbs.

ELECTRICAL RATING:

- Line Voltage 110-120 volts, 50-60 C.P.S.
- Power Consumption 92 watts

TUNING FREQUENCY RANGE:

540 to 1620 KC

INTERMEDIATE FREQUENCY:

455 KC

ELECTRICAL POWER OUTPUT:

- Maximum 5.0 watts
- Undistorted 3.0 watts

LOUDSPEAKER:

- Type Permanent Magnet
- Outside Cone Diameter 10"
- Voice Coil Impedance 3.2 ohms @ 400 C.P.S.
- Magnet Rating 3.16 Oz. Alnico V

TUBE COMPLEMENT:

No.	Tube	Function
V-1	6SK7	R-F Amplifier
V-2	6SA7	Frequency Converter
V-3	6SK7	I-F Amplifier
V-4	6H6	Compressor Rectifier
V-5	6SF7	1st Audio Amplifier
V-6	6SQ7	2nd Detector & Mike Amplifier
V-7	6V6-GT	Power Amplifier
V-8	5Y3-GT	Rectifier

SPECIAL SERVICING INFORMATION

BRIEF DESCRIPTION OF COMPRESSION CIRCUIT:

Model 801 automatic home recording circuit employs volume compression. Referring to the schematic diagram, it will be noted that V-4 (6H6) rectifies a portion of the output voltage and varies the grid bias of V-5 (6SF7). The compression system is automatic and is in the circuit on both record positions.

The compression voltage is approximately a minus 2.25 volts. This voltage may be checked by turning the switch to Radio Record position and feeding a 1 volt (RMS) 1,000 cycle signal into the diode return of the 2nd I-F (brown lead). Connect a vacuum tube voltmeter to the point indicated on the schematic diagram.

RECORDING HEAD PRESSURE:

The proper recording head pressure is 1¼ ounces. It is important, for best recording results, that this pressure be maintained at all times.

The cutting head pressure may be adjusted by turning the small screw on the top of the Recording Arm—CLOCKWISE TO INCREASE THE CUTTING DEPTH and COUNTER CLOCKWISE TO DECREASE THE CUTTING DEPTH. This adjustment is very critical and should be made in quarter turns employing a small postal scale or its equivalent as a means of accurate measurement.

STAGE GAIN MEASUREMENTS:

Measurements taken with Volume and Tone Controls maximum; Selector Switch in Radio position. A.V.C. shorted to ground.

- Standard Output 50 milliwatts
- Dummy Antenna 200 Mmf.
- Antenna to R-F Grid 7X at 1000 KC
- R-F Grid to Converter Grid 9X at 1000 KC
- Converter Grid to 1st I-F Grid 48X at 455 KC
- 1st I-F Grid to 2nd Detector 50X at 455 KC
- Overall Audio Gain 65 millivolts in — 50 milliwatts out (1st Audio Grid) (Voice Coil)

D. C. RESISTANCE MEASUREMENTS:

Due to a variation in winding methods, the D. C. resistance on all coils is subject to a 20% tolerance.

1st I-F Coil:

- Primary 17 ohms
- Secondary 14.5 ohms

2nd I-F Coil:

- Primary 17 ohms
- Secondary 14.5 ohms*

Oscillator Coil:

- Primary 1 ohm
- Secondary 6 ohms

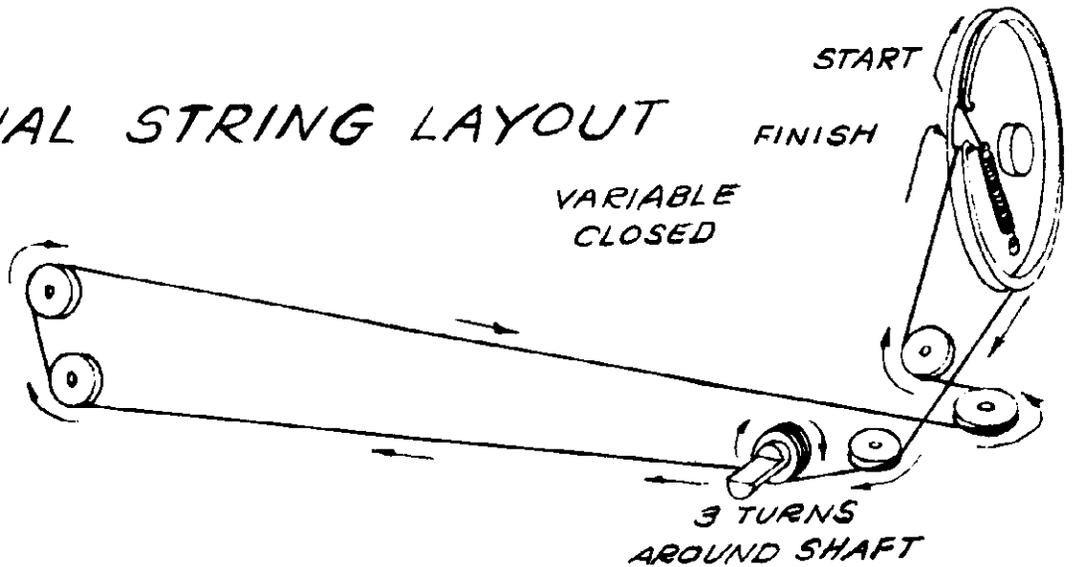
R-F Coil:

- Primary 58 ohms
- Secondary 4.2 ohms

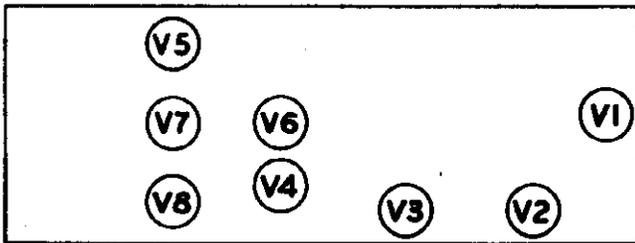
*Because of the 47K resistor in series with the secondary of the 2nd I-F, the reading shown can only be obtained by removing the coil from the can.

MODEL 801

DIAL STRING LAYOUT



SOCKET VOLTAGES



The socket voltages shown were measured under the following conditions:

1. D. C. voltages measured from socket contacts to chassis with a D. C. vacuum tube voltmeter.
2. A. C. voltages measured with a 1,000 ohms per volt A. C. meter.
3. Volume and Tone Controls maximum.
4. Selector Switch in Radio Receive position; no signal.
5. All voltages are positive D. C. unless otherwise noted.
6. Voltage readings subject to a 10% variation.

V-1—6SK7, R-F Amplifier:

Pin	Element	Voltage
1	Shield	0
2	Heater	0
3	Grid 3	0
4	Grid 1	-.5
5	Cathode	.5
6	Grid 2	80
7	Heater	6.0 VAC
8	Plate	187

V-2—6SA7, Frequency Converter:

Pin	Element	Voltage
1	Grid 3	0
2	Heater	0
3	Plate	187
4	Grids 2 & 4	80
5	Grid 1	-8.5
6	Cathode	0
7	Heater	6.0 VAC
8	Grid #3	-.6

V-3—6SK7, I-F Amplifier:

Pin	Element	Voltage
1	Shield	0
2	Heater	0
3	Grid 3	0
4	Grid 1	-.5
5	Cathode	2.6
6	Grid 2	80
7	Heater	6.0 VAC
8	Plate	187

V-4—6H6, Compressor Rectifier:

Pin	Element	Voltage
1	Shield	0
2	Heater	0
3	Plate-Diode 2	0
4	Cathode-Diode 2	0
5	Plate-Diode 1	-.15
6	No Connection	0
7	Heater	6.0 VAC
8	Cathode-Diode 1	.5

V-5—6SF7, 1st Audio Amplifier:

Pin	Element	Voltage
1	Shield	0
2	Grid 1	-.5
3	Cathode	0
4	Grid 2	11
5	Plate (Diode)	0
6	Plate	54
7	Heater	6.0 VAC
8	Heater	0

V-6—6SQ7, Detector & Microphone Amplifier

Pin	Element	Voltage
1	Shield	0
2	Grid (Triode)	-.55
3	Cathode	0
4	Plate (Diode)	0
5	Plate (Diode)	0
6	Plate (Triode)	91
7	Heater	6.0 VAC
8	Heater	0

V-7—6V6-GT, Power Amplifier:

Pin	Element	Voltage
1	No Connection	0
2	Heater	0
3	Plate	225
4	Grid 2	187
5	Grid 1	-10
6	No Connection	0
7	Heater	6.0 VAC
8	Cathode	0

V-8—5Y3-GT, Rectifier:

Pin	Element	Voltage
1	No Connection	0
2	Heater	245 (5.0 VAC to pin 8)
3	No Connection	0
4	Plate	260 VAC (to Pow. Trans. C.T.)
5	No Connection	0
6	Plate	260 VAC (to Pow. Trans. C.T.)
7	No Connection	0
8	Heater	245 (5.0 VAC to pin 2)

ALIGNMENT PROCEDURE

MODEL 801

Alignment procedure consists of the steps outlined in the alignment procedure chart. Make certain each step is done with a minimum input signal.

Connect output meter to speaker voice coil.

ALIGNMENT CHART

STEP	CONNECT TEST OSC. TO	TEST OSC. SETTING	POINTER SETTING	ADJUST FOR MAX. OUTPUT
1	Mixer Grid & Ground	455 KC	540 KC	Trimmers A, B, C, D
2	R-F Grid & Ground	1500 KC	1500 KC	Trimmer E
3	R-F Grid & Ground	600 KC	600 KC	Trimmer H
4	R-F Grid & Ground	1500 KC	1500 KC	Trimmers F & G
5	Repeat Steps 2, 3, & 4			
6	Check Stationizing. Slide pointer on string if stations are uniformly off in one direction.			

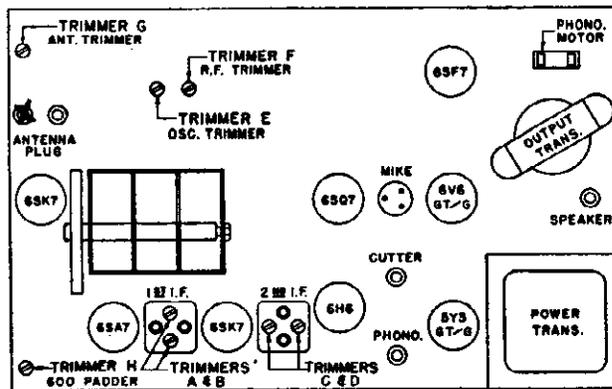


Figure 3 Trimmer Location

TABLE OF REPLACEABLE PARTS

REF. SYMBOL	DESCRIPTION	PB PART NO.	RESISTORS, 1/2 WATT, 20%
	CAPACITORS, TUBULAR		R-12, 15, 20, 27 220,000 ohms 73153
C-13	.001 Mfd. 600 volt	23001	R-14, 19, 25 470,000 ohms 73157
C-15, 22	.005 Mfd. 600 volt	23004	R-21 680,000 ohms 73159
C-14, 17	.02 Mfd. 600 volt	23007	R-8 1 megohm 73161
C-4, 5	.05 Mfd. 600 volt	23010	R-26 1.5 megohms 73163
C-16	.1 Mfd. 400 volt	23011	R-1, 3, 18 2.2 megohms 73165
C-9, 18	.05 Mfd. 200 volt	23017	R-13, 16, 17 4.7 megohms 73169
C-21	.1 Mfd. 200 volt	23019	
C-20, 23	.01 Mfd. 600 volt	23023	RESISTORS, 1 WATT 10%
	CAPACITORS, TRIMMER		R-31 150 ohms 73215
C-2, 10	3-30 Mmf. Dual	23400	RESISTORS, 2 WATT, 10%
C-12	300-800 Mmf. (Padder)	23402	R-5 10,000 ohms 73437
C-1A, B, C	CAPACITORS, VARIABLE		RESISTORS, WIRE WOUND
	3 gang	23521	R-6 1/2 ohm, 1 watt, 10% 73601
	CAPACITORS, CERAMIC		R-29 15 ohms, 1 watt, 10% 73605
C-6, 11	47 Mmf. 20%	23912	R-30 2,000 ohms, 5 watt, 10% 73631
C-3, 8	220 Mmf 20%	23915	TRANSFORMERS
	CAPACITORS, ELECTROLYTIC		T-2 Power (Plate Winding 520 volts center tapped; @ 70 MA)—89016C
C-25	20 Mfd. 350 volt	24003	T-1 Output—5,000 to 3.2 ohms—89409D
C-24	40 Mfd. 350 volt	24063	PLUGS
	CONTROLS		Antenna, Phono, Cutter & Speaker 66004
R-9	Volume, 1 megohm—tapped	25010C	Microphone 66013
R-10	Tone, 5 megohms	25506C	SOCKETS
	COILS		Tube, Std. octal 79002
L-3	1st I-F—455 KC	29004E	Microphone 79004
L-4	2nd I-F—455 KC	29007	Phono Pick-up 79005
L-1	R-F	29102F	A.C. Motor 79007
L-2	Oscillator	29205C	Dial Lamp 79010
	Loop	29335	MISC. PARTS
	RESISTORS, 1/2 WATT, 10%		Cabinet (specify finish) 21105
R-2, 22	39 ohms	73008	A.C. Cord, 8' 32003
R-7	390 ohms	73020	Cutter Cartridge 36024
R-23	560 ohms	73022	Dial, Stationized 38121
R-11	15,000 ohms	73039	Knobs 52037-1
R-4	22,000 ohms	73041	Lamp, Dial 54001
R-24, 28	47,000 ohms	73045	Microphone with cable 57010
			Record Changer-Recorder 58004E
			Speaker, 10" PM 83705
			Switch, wafer type 86009B

MODEL 301

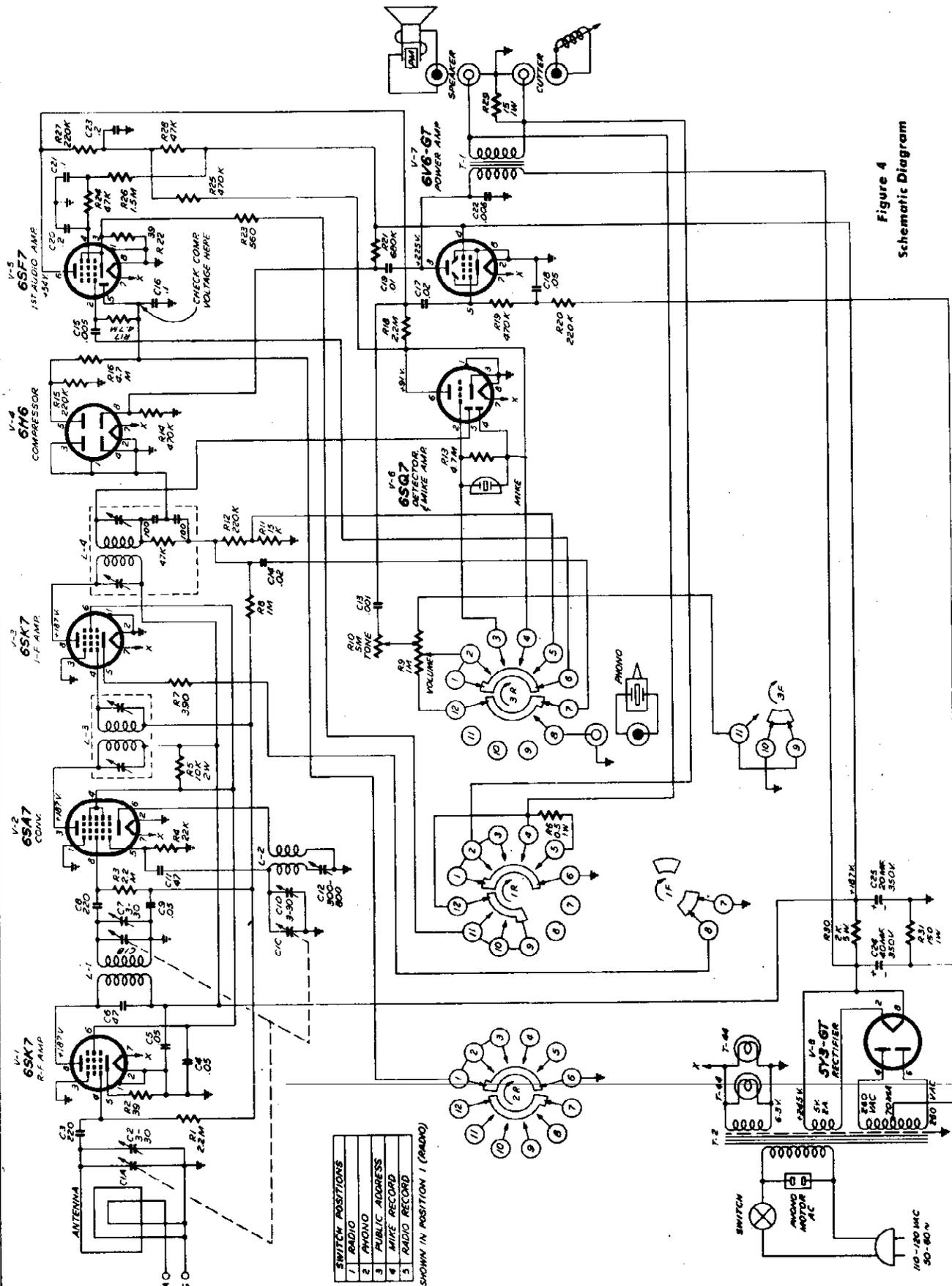
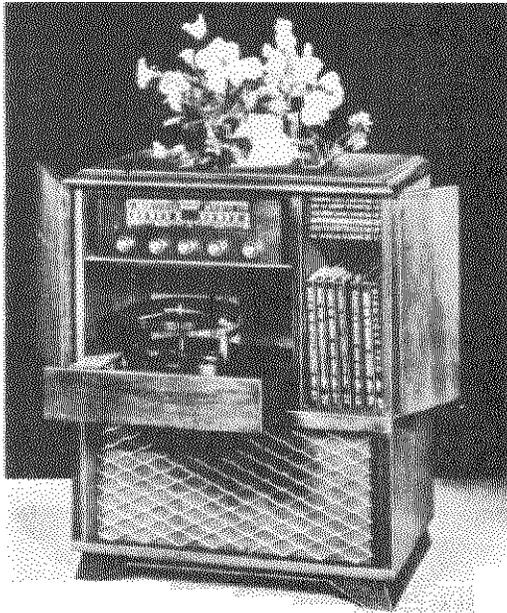


Figure 4
Schematic Diagram



Model 901

GENERAL DESCRIPTION

Model 901 is a console AM-FM radio-phonograph combination employing eight tubes plus one rectifier. Cabinet finishes are walnut, mahogany, maple and modern blonde oak.

SPECIFICATIONS

OVERALL DIMENSIONS:

Height 35"
 Width 29"
 Depth 18"
 Shipping Weight 100 Lbs.

ELECTRICAL RATING:

Line Voltage 110-120, 50-60 C.P.S.
 Power Consumption 90 watts @ 115 V.A.C.

TUNING FREQUENCY RANGE:

AM 540 to 1620 KC
 FM 88 to 108 MC

INTERMEDIATE FREQUENCY:

AM 455 KC
 FM 10.7 MC

ELECTRICAL POWER OUTPUT:

Maximum 6.0 watts
 Undistorted 4.0 watts

LOUDSPEAKER:

Type permanent magnet
 Outside Cone Diameter 10"
 Voice Coil Impedance 3.2 ohms @ 400 C.P.S.
 Magnet Rating 3.16 Oz. Alnico V

TUBES:

Tube	No.	Function
6BA6	V-1	R-F Amplifier
6BA6	V-2	Mixer
6BA6	V-3	I-F Amplifier
6AU6	V-4	I-F Driver
6AL5	V-5	Ratio Detector
6AU6	V-6	Oscillator
5Y3-GT	V-7	Rectifier
6SF7	V-8	AM Detector-1st Audio Amplifier
6V6-GT	V-9	Power Amplifier

SPECIAL SERVICING INFORMATION

D. C. RESISTANCE MEASUREMENTS:

1st AM I-F Coil:

Primary 7.5 ohms
 Secondary 7.5 ohms

2nd AM I-F Coil:

Primary 8.0 ohms
 Secondary 8.0 ohms

1st FM I-F Coil:

Primary 0.75 ohms
 Secondary 0.75 ohms

2nd FM I-F Coil:

Primary 1.5 ohms
 Secondary 0.5 ohms

Ratio Detector:

Primary 1.5 ohms
 Secondary 0.1 ohms
 Each side to Tertiary 0.25 ohms

AM R-F Coil:

Primary 5.8 ohms
 Secondary 4.2 ohms

AM Oscillator Coil:

Primary 1 ohm
 Secondary 6 ohms

All D.C. Resistance measurements are subject to a 20% tolerance.

STAGE GAIN MEASUREMENTS AM:

Measurements taken with Volume and Tone Controls maximum; Band Switch in AM position; A.V.C. shorted to ground.

Standard Output—50 milliwatts . . . Dummy Antenna—200 Mmf.

Antenna to R-F Grid 12X at 1000 KC
 R-F Grid to Converter Grid 9X at 1000 KC
 Converter Grid to 1st I-F Grid 20X at 455 KC
 1st I-F Grid to 2nd Detector 40X at 455 KC
 Overall Audio-Gain—30 millivolts to produce 50 milliwatts at 400 C.P.S.

STAGE GAIN MEASUREMENTS FM:

Measurements taken with Volume and Tone Controls maximum; Band Switch in FM position; A.V.C. shorted to ground.

Dummy Antenna—270 ohms.

Dipole Terminal to R-F Grid 0.9X at 98 MC
 Converter Grid to 1st I-F Grid 12X at 10.7 MC
 1st I-F Grid to Driver Grid 45X at 10.7 MC

MODEL 901

SOCKET VOLTAGES

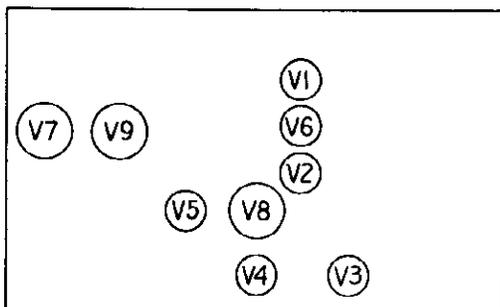


Figure 2 Tube Location Chart

The socket voltages shown were measured with the following conditions existent:

1. D.C. voltages measured from socket contacts to chassis with a D.C. vacuum tube voltmeter.
2. A.C. voltages measured with a 1,000 ohms per volt A.C. meter.
3. Volume and Tone Controls maximum.
4. Selector Switch in AM Radio position.
5. No signal.
6. All voltages are positive D.C. unless otherwise noted.
7. Voltage readings subject to a 10% variation.

VOLTAGES SHOWN IN PARENTHESIS WERE MEASURED WITH THE SELECTOR SWITCH IN FM POSITION.

V-1-6BA6, R-F Amplifier:

Pin	Element	Voltage
1	Grid 1	-.2 (-.5)
2	Grid 3	0
3	Heater	6.0 VAC
4	Heater	0
5	Plate	175 (160)
6	Grid 2	115 (90)
7	Cathode	2.35 (1.4)

V-4-6AU6, F-M Driver

(Used on F-M only):

Pin	Element	Voltage
1	Grid 1	0
2	Grid 3	0
3	Heater	6.0 VAC
4	Heater	0
5	Plate	165
6	Grid 2	165
7	Cathode	1.5

V-7-5Y3-GT, Rectifier:

Pin	Element	Voltage
1	No Connection	0
2	Heater	320 (5.0 VAC to pin 8)
3	No Connection	0
4	Plate	340 VAC
5	No Connection	0
6	Plate	340 VAC
7	No Connection	0
8	Heater	320 (5.0 VAC to pin 2)

V-2-6BA6, Mixer:

Pin	Element	Voltage
1	Grid 1	-.4 (0)
2	Grid 3	0
3	Heater	0
4	Heater	6.0 VAC
5	Plate	180 (190)
6	Grid 2	140 (95)
7	Cathode	7.2 (2.1)

V-5-6AL5, FM Ratio Detector

(Used on FM only):

Pin	Element	Voltage
1	Cathode 1	0
2	Plate 2	0
3	Heater	0
4	Heater	6.0 VAC
5	Cathode 2	.25
6	Shield	0
7	Plate 1	-.25

V-8-6SF7, 1st Audio-

AM Detector:

Pin	Element	Voltage
1	Shield	0
2	Grid 1	-.5
3	Cathode & Grid 3	0
4	Grid 2	10
5	Diode Plate	-.7
6	Plate	80
7	Heater	6.0 VAC
8	Heater	0

V-3-6BA6, I-F Amplifier:

Pin	Element	Voltage
1	Grid 1	-.3 (-.2)
2	Grid 3	0
3	Heater	6.0 VAC
4	Heater	0
5	Plate	135 (125)
6	Grid 2	135 (125)
7	Cathode	1.2 (1.1)

V-6-6AU6, Oscillator:

Pin	Element	Voltage
1	Grid 1	-6 (-1)
2	Grid 3	0
3	Heater	0
4	Heater	6.0 VAC
5	Plate	185 (170)
6	Grid 2	185 (170)
7	Cathode	0

V-9-6V6-GT, Power Amplifier:

Pin	Element	Voltage
1	No Connection	0
2	Heater	6.0 VAC
3	Plate	310
4	Grid 2	240
5	Grid 1	0
6	No Connection	0
7	Heater	0
8	Cathode	12.5

ALIGNMENT PROCEDURE

AM ALIGNMENT:

AM Alignment consists of the steps outlined in the AM Alignment Chart. Make certain each step is done with a minimum signal input.

Connect output meter to speaker voice coil.

AM ALIGNMENT CHART:

STEP	CONNECT TEST OSC. TO	TEST OSC. SETTING	POINTER SETTING	ADJUST FOR MAX. OUTPUT
1	Mixer Grid & Ground	455 KC	540 KC	S-7, 8, 9, 10
2	R-F Grid & Ground	1500 KC	1500 KC	Trimmers F & G
3	R-F Grid & Ground	600 KC	600 KC	Padder B
4	R-F Grid & Ground	1500 KC	1500 KC	Trimmer A
5	Repeat Steps 2, 3, & 4 in sequence.			
6	Check Stationizing. Slide pointer on string if stations are uniformly off in one direction.			

MODEL 901

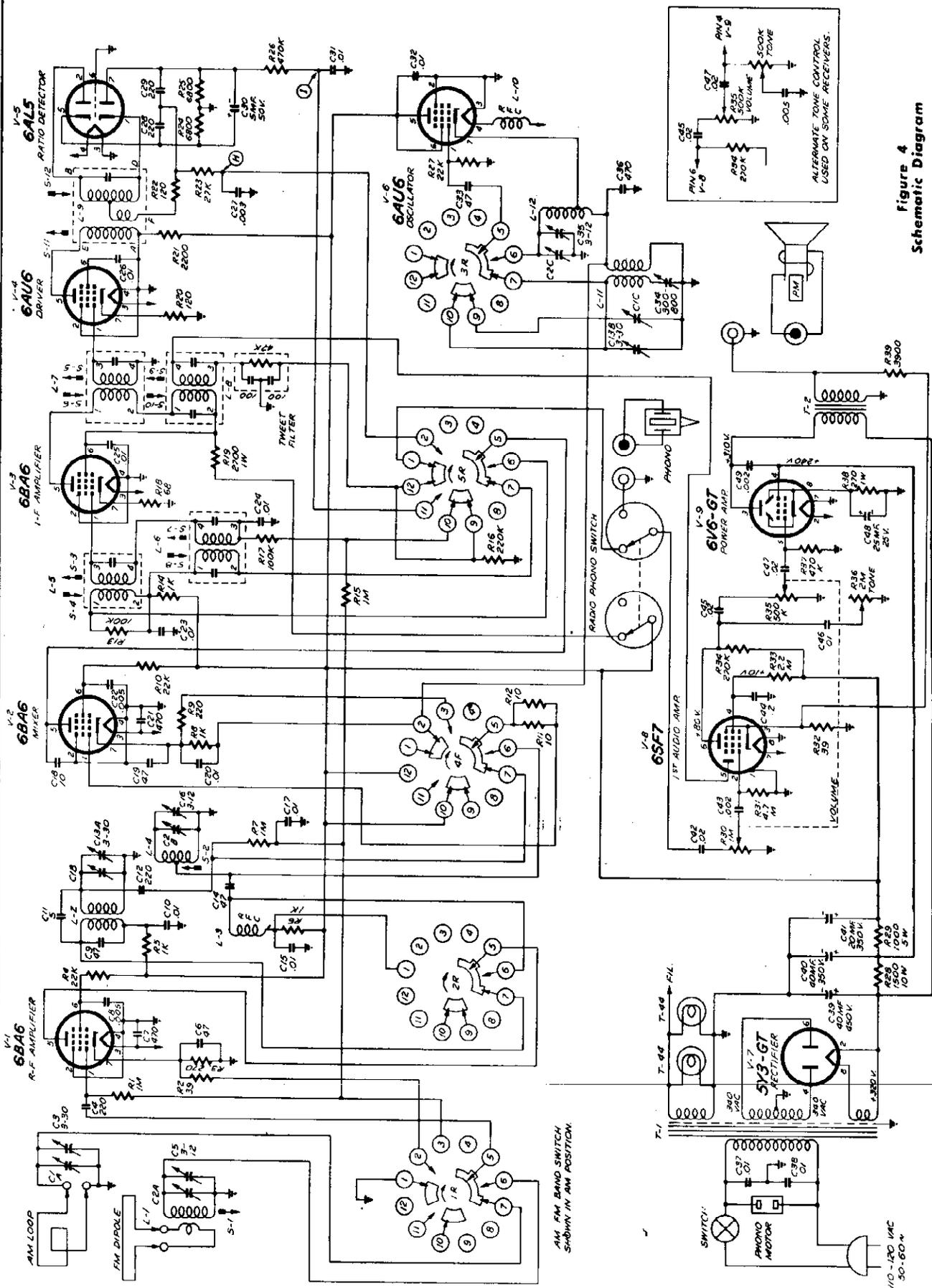


Figure 4
Schematic Diagram

TABLE OF REPLACEABLE PARTS

REF. SYMBOL	DESCRIPTION	PB PART NO.
CAPACITOR, TUBULAR,		
C-43, 49	.002 Mfd. 600 volt	23002
C-42, 45, 47	.02 Mfd. 600 volt	23007
C-27	.003 Mfd. 600 volt	23016
C-44	.2 Mfd. 400 volt	23020
C-10, 15, 17, 20, 23, 24, 25, 26, 31, 32, 46	.01 Mfd. 600 volt	23023
CAPACITOR, TRIMMER,		
C-13A & B	Dual 3-30 Mmf.	23400
C-34	Padder, 300-800 Mmf.	23402
C-3	Single 3-30 Mmf.	23406
C-5, 16	Tubular 3-12 Mmf.	23408
C-35	Single 3-12 Mmf.	23412
CAPACITOR, VARIABLE,		
C-1A, B, C, C-2A, B, C	3 gang AM-FM	23525
CAPACITOR, CERAMIC,		
C-11	5 Mmf. 20%	23908
C-6, 9, 14	47 Mmf. 20% GP	23912
C-4, 12, 28, 29	220 Mmf. 20% GP	23915
C-2, 21, 36	470 Mmf. 20% GP	23916
C-18	10 Mmf. 10%	23923
	Tweet Filter	23930
C-8, 22	.005 Mfd. Hy-Kap	23931
C-37, 38	.01 Mfd. 125 VAC	23932
CAPACITOR, ELECTROLYTIC;		
C-48	25 Mfd. 25 volts	24006
C-39	40 Mfd. 450 volts	24030
C-30	5 Mfd. 50 volts	24038
C-40	40 Mfd. 350 volts	24063
C-41	20 Mfd. 350 volts	24064
CONTROLS,		
R-36	Tone, 2 megohms w/AC switch	25014
R-30, 35	Volume, 2 deck, 1 megohm & 500 K	25021

REF. SYMBOL	DESCRIPTION	PB PART NO.
COILS,		
L-9	Ratio Detector	29018
L-6	1st I-F—AM	29041
L-5	1st I-F—FM	29042
L-8	2nd I-F—AM	29051
L-7	2nd I-F—FM	29044
L-2	AM—R-F	29102F
L-3, 10	R-F Choke	29104
L-4, 12	FM R-F Osc. (same form)	29109
L-11	AM Osc.	29205C
	Loop	29335A
L-1	FM Antenna	29409

TABLE OF REPLACEABLE PARTS

REF. SYMBOL	DESCRIPTION	PB PART NO.
RESISTORS, 1/2 WATT, 10%,		
R-11, 12	10 ohms	73001
R-2, 32	39 ohms	73008
R-18	68 ohms	73011
R-20, 22	120 ohms	73014
R-9	220 ohms	73017
R-3	270 ohms	73018
R-5, 6, 8, 14	1,000 ohms	73025
R-21	2,200 ohms	73029
R-39	3,900 ohms	73032
R-24, 25	6,800 ohms	73035
R-4, 10, 27	22,000 ohms	73041
R-23	27,000 ohms	73042
R-34	270,000 ohms	73054
RESISTORS, 1/2 WATT, 20%,		
R-13, 17	100,000 ohms	73149
R-16	220,000 ohms	73153
R-26, 37	470,000 ohms	73157
R-1, 7, 15	1 megohm	73161
R-33	2.2 megohms	73165
R-31	4.7 megohms	73169
RESISTORS, 1 WATT, 10%,		
R-38	270 ohms	73218
R-19	2,700 ohms	73230
RESISTORS, WIRE WOUND,		
R-29	1,000 ohms, 10 watt, 10%	73623
R-28	1,500 ohms, 10 watt, 10%	73629
TRANSFORMERS,		
T-1	Power, plate winding 105 MA @ 340 volts to center tap	89024
T-2	Output, 5,000 to 3.2 ohms	89409
SOCKETS,		
	Tube, Std. octal	79002
	AC Motor	79007
	Lamp—Comp. light	79010
	Dual—Phono and speaker	79018
	Antenna	79045
	Tube, 7 pin miniature	79051
PLUGS,		
	Antenna, (pin type)	66001
	Speaker & Phono	66004
MISC. PARTS,		
	Cabinet (specify finish)	21117
	AC Card B'	32003
	Dial, Stationized	38122
	Lamp, T-47	54001
	3-Speed Record Changer V-M 950	58037
	3-Speed Record Changer Webster 100-11	58036
	Dial Pointer	67030
	Loudspeaker, 10" PM	83705
	Radio-Phono Switch	86008
	Band Switch	86017C

MODEL 602

GENERAL DESCRIPTION

Model 602 is a six tube superheterodyne receiver contained in a table model cabinet of natural or bleached mahogany finish.

Production of this model is divided into two sections: these sections are referred to as "Early" and "Late". There are two major differences between early and late production:

1. Dual 4" PM speakers were used in early production, while late production used a single 4 x 6" PM speaker.
2. Miniature tubes are used throughout in later production.

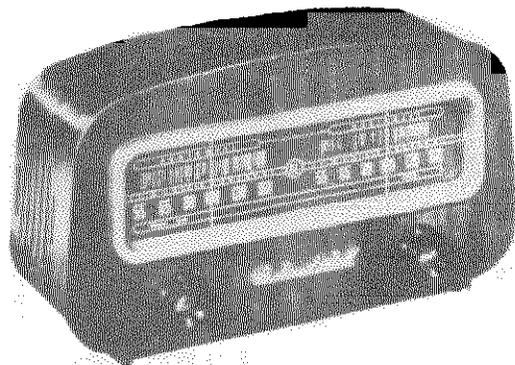


Figure 1

Model 602 "Early"

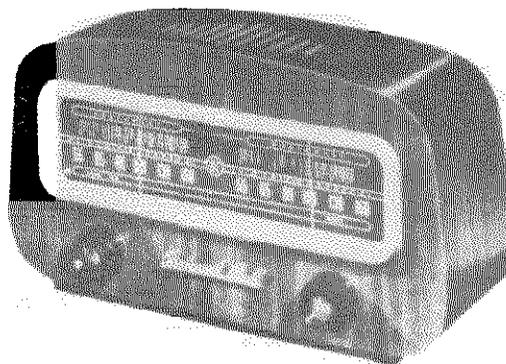


Figure 2

Model 602 "Late"

SPECIFICATIONS

OVERALL DIMENSIONS:

Height — 8½" Width — 13"
 Depth — 6" Weight — 7 Lbs.

ELECTRICAL RATING:

Line Voltage — 110-120 volts A.C. or D.C.
 Power Consumption — 28 watts

TUNING FREQUENCY RANGE:

540 to 1620 KC

INTERMEDIATE FREQUENCY:

455 KC

ELECTRICAL POWER OUTPUT (MAXIMUM):

1.7 watts

LOUDSPEAKER:

Type — permanent magnet
 Outside Cone Diameter — 4" (4 x 6" "Late")
 Voice Coil Impedance — 3.2 ohms @ 400 C.P.S.
 Magnet Rating — .68 Oz. Alnico V

TUBE COMPLEMENT:

Tubes shown in parenthesis indicate late production.

NO.	TUBE	FUNCTION
V-1	6BJ6	R-F Amplifier
V-2	12SA7 (12BE6)	Frequency Converter
V-3	6BJ6	I-F Amplifier
V-4	12SQ7 (12AT6)	2nd Detector — 1st Audio
V-5	50L6-GT (50C5)	Power Amplifier
V-6	35Z5-GT (35W4)	Rectifier

SPECIAL SERVICE INFORMATION

D.C. RESISTANCE MEASUREMENTS:

1st I-F Coil:
 Primary — 11.8 ohms
 Secondary — 11.5 ohms
 2nd I-F Coil:
 Primary — 12.2 ohms
 Secondary — 11.5 ohms
 Oscillator Coil:
 Primary — 1 ohm
 Secondary — 5.5 ohms

OSCILLATOR CATHODE VOLTAGES:

Measured with an A.C. vacuum tube voltmeter (input impedance above 10 megohms) at 117 volts A.C. line.
 1500 KC — 1.0 VAC
 1000 KC — 1.0 VAC
 750 KC — 1.1 VAC
 540 KC — 1.1 VAC

SOCKET VOLTAGES:

The voltages shown were measured under the following conditions:

1. D.C. Voltages with a vacuum tube voltmeter from socket contacts to B minus buss.
2. Filament voltages measured with a 1,000 ohms per volt meter across the filament of each tube.
3. Volume and Tone Controls maximum.
4. 117 volts A.C. line.
5. Voltages are positive D.C. unless otherwise noted.
6. Voltages are subject to a 10% variation.

**V-1 — 6BJ6,
R-F Amplifier**

Pin	Element	Voltage
1	Grid 1	-3.5
2	Cathode	.25
3	Heater	6.0 VAC
4	Heater	6.0 VAC
5	Plate	60
6	Grid 2	85
7	Grid 3	0

**V-2 — 12SA7,
Frequency Converter**

Pin	Element	Voltage
1	Grid 5	0
2	Heater	12.0 VAC
3	Plate	85
4	Grids 2 & 4	85
5	Grid 1	-11
6	Cathode	0
7	Heater	12.0 VAC
8	Grid 3	-3.5

**V-2 — 12BE6,
Frequency Converter**

Pin	Element	Voltage
1	Grid 1	-11
2	Cathode	0
3	Heater	12.0 VAC
4	Heater	12.0 VAC
5	Plate	85
6	Grids 2 & 4	85
7	Grid 3	-3.5

**V-4 — 12AT6,
2nd Detector — 1st Audio**

Pin	Element	Voltage
1	Grid	-6
2	Cathode	0
3	Heater	12.0 VAC
4	Heater	12.0 VAC
5	Plate Diode	-4
6	Plate Diode	-4
7	Plate	56

**V-5 — 50L6-GT,
Power Amplifier**

Pin	Element	Voltage
1	No Conn.	0
2	Heater	50.0 VAC
3	Plate	105
4	Grid 2	105
5	Grid 1	-10
6	No Conn.	0
7	Heater	50.0 VAC
8	Cathode	5.6

**V-5 — 50C5,
Power Amplifier**

Pin	Element	Voltage
1	Grid 3-Cathode	5.6
2	Grid 1	-10
3	Heater	50.0 VAC
4	Heater	50.0 VAC
5	Grid 1	-10
6	Grid 2	105
7	Plate	105

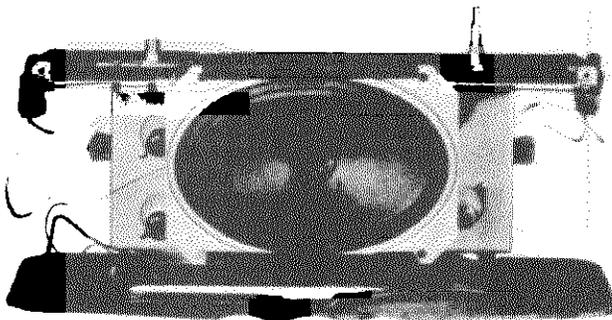


Figure 3

Top View of 602 "Late" Chassis

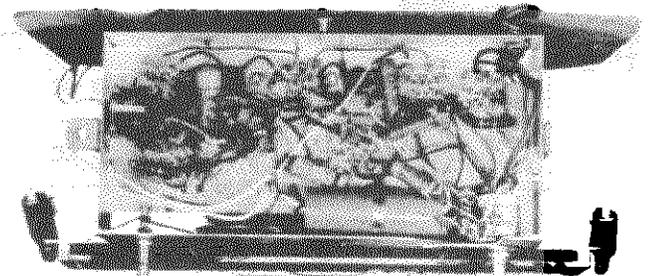


Figure 4

Bottom View of 602 "Late" Chassis

**V-3 — 6BJ6,
I-F Amplifier**

Pin	Element	Voltage
1	Grid 1	-3.5
2	Cathode	1.15
3	Heater	6.0 VAC
4	Heater	6.0 VAC
5	Plate	85
6	Grid 2	85
7	Grid 3	0

**V-4 — 12SQ7,
2nd Detector — 1st Audio**

Pin	Element	Voltage
1	Shield	0
2	Grid	-6
3	Cathode	0
4	Diode Plate	-4
5	Diode Plate	-4
6	Plate	56
7	Heater	12.0 VAC
8	Heater	12.0 VAC

**V-6 — 35Z5-GT,
Rectifier**

Pin	Element	Voltage
1	No Conn.	0
2	Heater	35.0 VAC
3	Heater Tap	6.0 VAC to pins (Dial Lite) 2 or 7
4	No Conn.	0
5	Plate	109 VAC
6	No Conn.	0
7	Heater	35.0 VAC
8	Cathode	120

**V-6 — 35W4,
Rectifier**

Pin	Element	Voltage
1	No Conn.	0
2	No Conn.	0
3	Heater	35.0 VAC
4	Heater	35.0 VAC
5	Plate	109 VAC
6	Heater Tap	6.0 VAC
7	Cathode	120

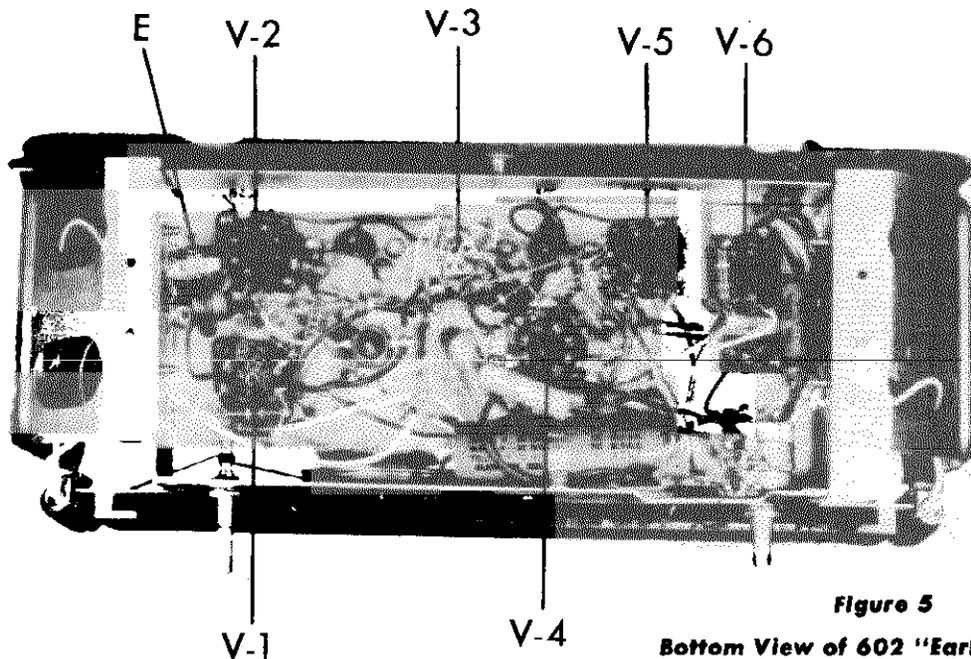


Figure 5

Bottom View of 602 "Early" Chassis

MODEL 602

ALIGNMENT PROCEDURE

Alignment procedure consists of the steps outlined in the Alignment Chart. See Figures 5 and 6 for location of trimmers. Make certain each step is done with a minimum input signal. Connect output meter to speaker voice coil.

STEP	CONNECT TEST OSC. TO	TEST OSC. SETTING	POINTER SETTING	ADJUST FOR MAX. OUTPUT
1	Mixer Grid & Ground	455 KC	540 KC	Trimmers A, B, C & D
2	Mixer Grid & Ground	455 KC	540 KC	Trimmer E for minimum output
3	Mixer Grid & Ground	1620 KC	1620 KC	Trimmer F
4	Test Loop	1500 KC	1500 KC	Trimmer G
5	REPEAT STEPS 3 & 4			
6	CHECK STATIONIZING. SLIDE POINTER ON STRING IF STATIONS ARE UNIFORMLY OFF IN ONE DIRECTION.			

A, B, C, D — I-F Trimmers

E — I-F Trap

F — Osc. Trimmer

G — Ant. Trimmer

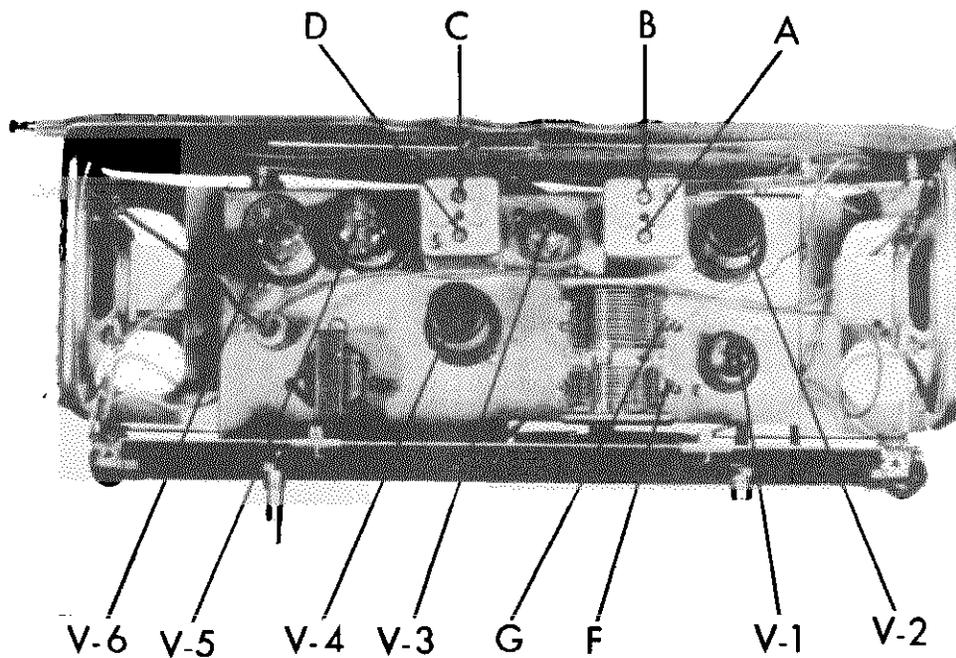


Figure 6

Top View of 602 "Early" Chassis

MODEL 602

TABLE OF REPLACEABLE PARTS

COILS			TRANSFORMERS			MISC. PARTS		
REF. SYMBOL	DESCRIPTION	P. B. PART NO.	REF. SYMBOL	DESCRIPTION	P. B. PART NO.	DESCRIPTION	P. B. PART NO.	P. B. PART NO.
L-1	I-F Trap	29005	T-1	Output, 2,500 to 6 ohms (dual speakers)	89433	Cabinet (2 speakers—"Early")	walnut bleach	602 BG
L-2	Oscillator	29220	T-1	Output, 2,500 to 3.2 ohms (single speaker)	89417	Cabinet (1 speaker—"Late")	walnut bleach	602 AL
L-3	1st I-F, 455 KC (Alternate)	29059				Loop Antenna		612 BG
L-4	2nd I-F, 455 KC (Alternate)	29060				A. C. Cord, 6 ft.		612 AL
		29046				Dial, stationized		29341
CAPACITORS			RESISTORS					
REF. SYMBOL	DESCRIPTION	P. B. PART NO.	REF. SYMBOL	DESCRIPTION	P. B. PART NO.			
C1A & B	Variable, 2 gang	23529	R-1	Carbon, 120 ohms, ½ watt, 10%	73014	Dial Escutcheon		41040
C-2	Tubular, .2 Mfd. 200 volt	23018	R-2	Carbon, 4,700 ohms ½ watt, 10%	73033	Tuning Knob		52055A
C-3	Ceramic, 220 Mmf. 500 volt	23915	R-3	Carbon, 1 megohm, ½ watt, 20%	73161	Volume Knob		52057A
C-4	Ceramic, 220 Mmf. 500 volt	23915	R-4	Carbon, 22,000 ohms, ½ watt, 10%	73041	Tone Knob		52056A
C-5	Tubular, .05 Mfd. 200 Volt	23017	R-5	Carbon, 2.2 megohms, ½ watt, 20%	73165	Dial Lamp, T-47		54002
C-6	Ceramic, 220 Mmf. 500 volt	23915	R-6	Carbon, 220 ohms, ½ watt, 10%	73017	Speaker Plug		66013
C-7	Tubular, .001 Mfd. 600 volt	23001	R-8	Carbon, 4.7 megohms, ½ watt, 20%	73169	Dial Pointer		67036
C-8	Tubular, .01 Mfd. 600 volt	23006	R-9	Carbon, 220,000 ohms, ½ watt, 20%	73153	Tube Socket, octal ("Early")		79002
C-9	Ceramic, 5000 Mmf. 500 volt	23931	R-10	Carbon, 150 ohms, ½ watt, 10%	73015	Speaker Socket		79004
C-10	Electrolytic, 20 Mfd. 25 volt (part of C-13 A, B, & C)	24034B	R-11	Carbon, 180 ohms, 1 watt, 10%	73216	Tube Socket, 7 pin miniature		79081
C-11	Tubular, .005 Mfd. 600 volt	23004	R-12	Carbon, 1,000 ohms, 1 watt, 10%	73225	Tube Socket, 7 pin miniature, W/shield		79088
C-12	Tubular, .05 Mfd. 200 volt	23017				Speaker, 4" P.M. ("Early")		83007
C-13 A, B, C	Electrolytic, 30-20-20 Mfd. 150 volt	24034B				Speaker, 4 x 6 P.M. ("Late")		83105B
C-14	Tubular, .005 Mfd. 600 volt	23004						
CONTROLS								
REF. SYMBOL	DESCRIPTION	P. B. PART NO.						
R-7 A & B	Volume & Tone (Dual) 500,000 ohms	25024						

LINE VOLTAGE: This receiver is designed for operation on 105-125 Volts; 60 Cycles, Alternating Current (AC) only.

POWER CONSUMPTION INCLUDING RECORD CHANGER: 115 Watts.

TUNING RANGE:

- Broadcast Band: 540 to 1650 Kilocycles (182 to 555 Meters)
- F-M Band: 87.5 to 108.5 Megacycles (2.7 to 3.4 Meters)

DIAL SCALE: The Dial Scale is calibrated in Kilocycles times 10 for the Broadcast Band, and in Megacycles for the F-M Band, corresponding to newspaper or periodical listings.

TUBES: The Tubes used, and their functions, are as follows:

- 12AT7 R-F Amplifier and Mixer (F-M)
- 6BE6 A-M Converter and F-M Oscillator
- 6BA6 1st I-F Amplifier (A-M & F-M)
- 6BA6 2nd I-F Amplifier (F-M)

- 6AL5 F-M Detector
- 6AV6 A-M Detector, A.V.C. and Audio Amp.
- 6V6GT Beam Power Amplifier
- 5Y3GT Rectifier

For the placement of these tubes, refer to the diagram on page 3 of this folder.

INSTALLATION: This receiver is complete in every detail for efficient and immediate operation. The following installation procedure should be followed in setting up the receiver for use:

- (1) Remove all packing material.
- (2) Examine the tubes on the receiver chassis and be sure that they are firmly in their sockets.
- (3) Remove all shipping screws from the receiver and record changer compartments as noted on the attached instruction tags. Failure to remove the shipping screws from the rubber cushioned chassis brackets retaining the receiver chassis in place during shipment, may cause microphonic howl.
- (4) Retain all screws and hardware removed from the receiver chassis and record changer for future re-use in shipping.

During the alignment procedure all adjustments should be made under the following conditions:

- (A) Line voltage set at 117 Volts A.C.
- (B) Volume control at maximum position.
- (C) Tone control set at extreme left position (Treble).
- (D) Minimum input from the signal generator. This procedure should be adhered to, otherwise adjustments will be broad, due to the action of the automatic volume control.

Refer to the trimmer and tube location diagram below for trimmer and core locations. Follow the sequence in the alignment chart for proper procedure.

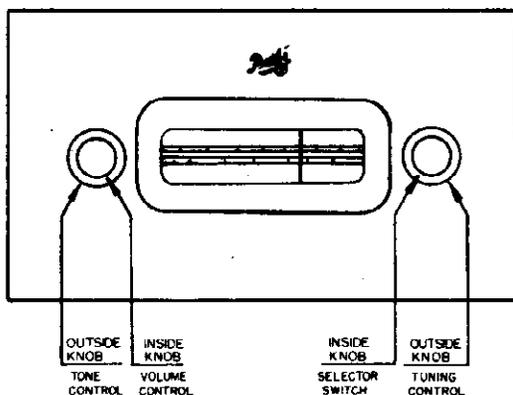


FIG. 1—FRONT PANEL CONTROLS

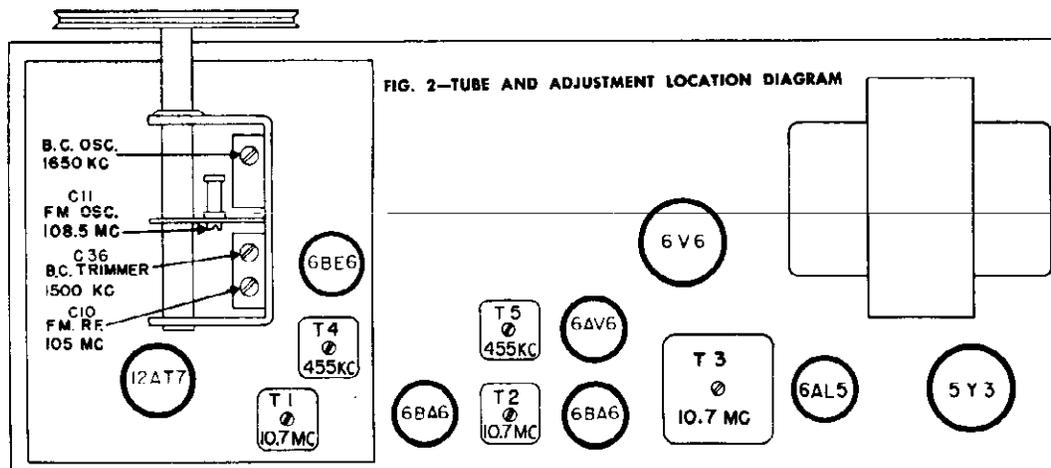


FIG. 2—TUBE AND ADJUSTMENT LOCATION DIAGRAM

MODEL 851

ALIGNMENT CHART

STEP	CIRCUIT ALIGNED	RECEIVER DIAL AT	SIGNAL GENERATOR		METER CONNECTIONS		METER INDICATION		
			TYPE	FREQ.	TYPE	CONNECTIONS			
1	B.C. I.F.	B.C. BAND MAX. FREQ.	A.M.	455 KC 30% MOD.	REAR B.C. SECTION OF VARIABLE CONDENSER	OUTPUT	ACROSS VOICE COIL	ADJUST TOP & BOT. OF T4 & T5	MAX. OUTPUT
	PREFERRED METHOD 2	F.M. BAND MAX. FREQ.	F.M.	10.7 MC. 30% MOD.	HIGH SIDE THROUGH .005 MF. (APPROX.) CAP TO PIN 7 OF 12A T7	OUTPUT	ACROSS VOICE COIL	TOP & BOT. OF T1 & T2; BOT. OF T3	MAX. OUTPUT
ALTERNATE METHOD 2	I.F.		RF. OR A.M.	10.7 MC. UNMOD.			D.C. V.T.V.M.	NEGATIVE TO PIN 7 OF 6A L5; POSITIVE TO GROUND	MAX. DEFLECTION
3	F.M.	F.M. BAND	F.M.	10.7 MC. 30% MOD.		OUTPUT	ACROSS VOICE COIL	TOP	MAX. OUTPUT
	PREFERRED METHOD 3	MAX. FREQ.	RF. OR A.M.	10.7 MC. UNMOD.		D.C. V.T.V.M.	NEG. TO JUNCTION OF 82K5 AT 6A L5; POS. TO JUNCTION OF R15 & C17.	ZERO BETWEEN TWO OPPOSITE POLARITY PEAKS	
4	F.M.	F.M. BAND	F.M.	108.5 MC. 30% MOD.	EACH SIDE OF GEN. OUTPUT THROUGH 150 OHM RESISTOR TO F.M. ANT. TERMINALS	OUTPUT	ACROSS VOICE COIL	TRIMMER ON TOP	MAX. OUTPUT
	ALTERNATE METHOD 4	MAX. FREQ.	R.F. OR A.M.	108.5 MC. UNMOD.		D.C. V.T.V.M.	NEGATIVE TO PIN 7 OF 6A L5; POSITIVE TO GROUND	CENTER OF VAR. COND. (C11)	MAX. DEFLECTION
5	F.M.	F.M. BAND	F.M.	105 MC. 30% MOD.		OUTPUT	ACROSS VOICE COIL	TRIMMER AT REAR OF VAR. COND. (C10)	MAX. OUTPUT
	PREFERRED METHOD 5	105 MC	R.F. OR A.M.	105 MC. UNMOD.		D.C. V.T.V.M.	NEGATIVE TO PIN 7 OF 6A L5; POSITIVE TO GROUND		MAX. DEFLECTION
6	B.C.	B.C. BAND	A.M.	1650 KC 30% MOD.	REAR B.C. SECTION OF VARIABLE CONDENSER	OUTPUT	ACROSS VOICE COIL	TRIMMER AT FRONT OF VAR. COND. (C34).	MAX. OUTPUT
	ALTERNATE METHOD 6	MAX. FREQ.		1650 KC 30% MOD.		D.C. V.T.V.M.	NEGATIVE TO PIN 7 OF 6A L5; POSITIVE TO GROUND	B.C. TRIM. AT REAR OF VAR. COND. (C36).	MAX. DEFLECTION
7	B.C.	B.C. BAND	A.M.	1500 KC 30% MOD.	EACH SIDE OF GEN. OUTPUT TO 2 OR 3-TURN LOOP (1 FOOT DIA.) SEVERAL FEET FROM ANT.	OUTPUT	ACROSS VOICE COIL		MAX. OUTPUT
	PREFERRED METHOD 7	1500 KC		1500 KC 30% MOD.		D.C. V.T.V.M.	ACROSS VOICE COIL		MAX. OUTPUT

29.45

NOTES:

- 1-TURN VOLUME CONTROL FULLY CLOCKWISE.
- 2-MAINTAIN SIGNAL INPUT LOW ENOUGH TO HAVE LESS THAN 2 VOLTS ACROSS METERS.
- 3-UNLESS OTHERWISE NOTED, CONNECT LOW SIDE OF SIGNAL GENERATOR TO CHASSIS.
- 4-UNLESS OTHERWISE NOTED, SET VARIABLE CONDENSER TO MINIMUM CAPACITY (MAX. FREQ.)
- 5-USE PROPER TOOL FOR SMALL I.F. TRANS. ADJUSTMENTS— I.E., .150 DIA. BAKELITE WITH BLADE .075 THICK.
- 6-MAINTAIN 60 CYCLE LINE VOLTAGE AT APPROX. 117 VOLTS.

SPECIFICATIONS

CIRCUIT	Six-tube superheterodyne
FREQUENCY RANGE	540—1605 kc.
AUDIO OUTPUT	1.2 watts
POWER INPUT	5.5 amperes at 6.6 volts, d.c.
INTERMEDIATE FREQUENCY	455 kc.
PHILCO TUBES (6)	6BA6 (2), 6BE6, 6AV6, 6AS5, 6X4

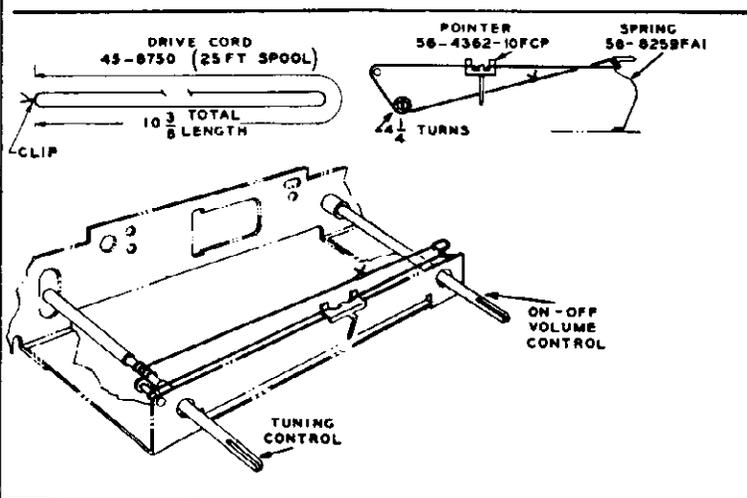


Figure 1. Drive-Cord Installation Details

TPO 1189

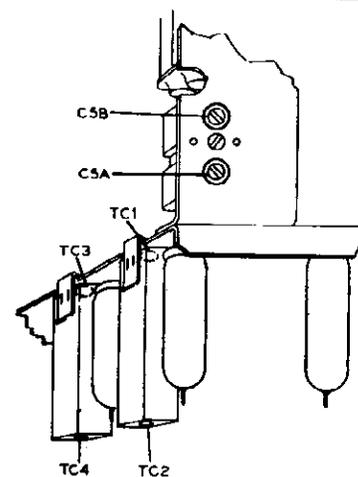


Figure 2. View Showing Trimmer Locations

TPO 1190

ALIGNMENT PROCEDURE

OUTPUT METER — Connect across voice coil.

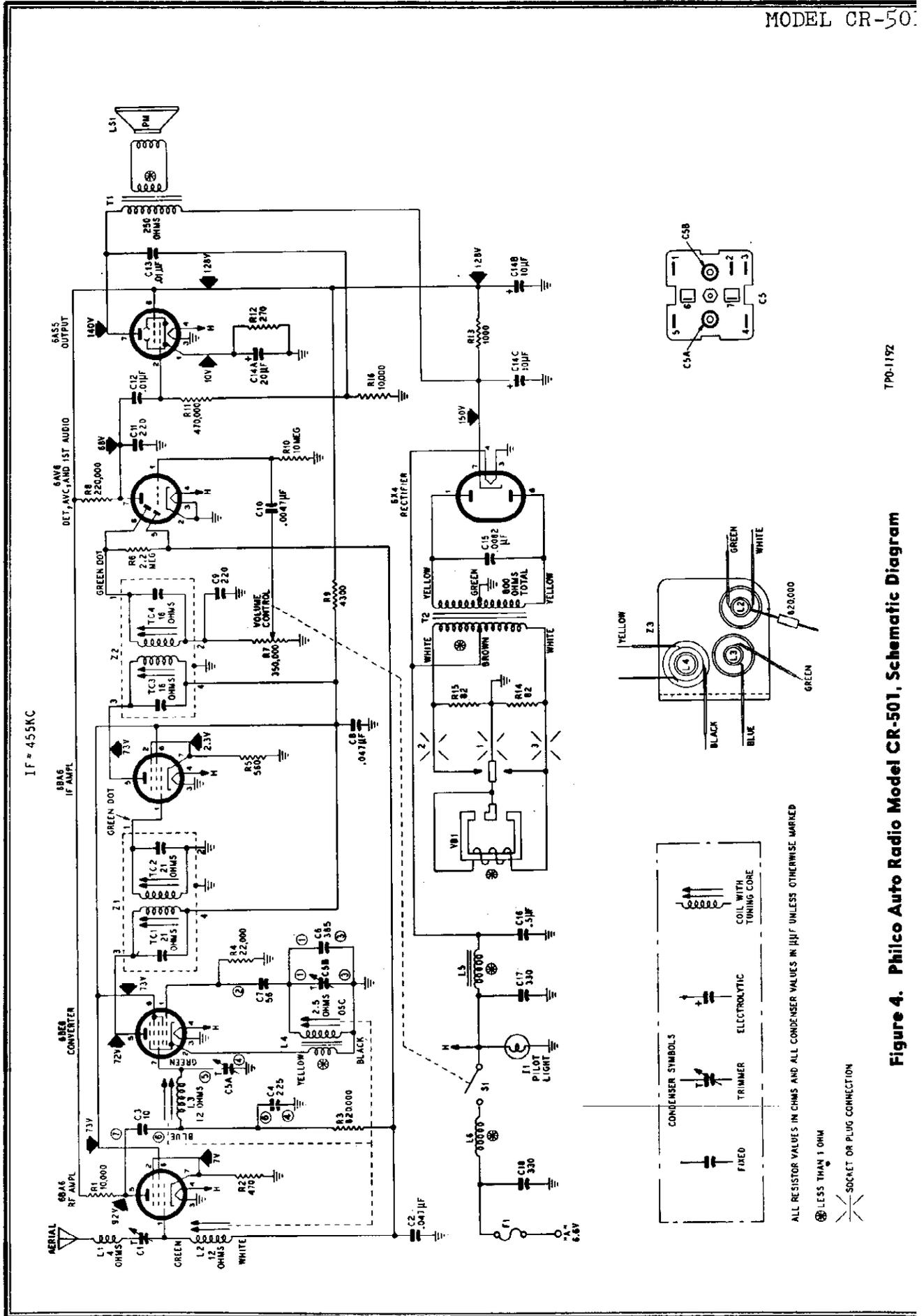
SIGNAL GENERATOR — Connect ground lead to chassis; connect output lead as indicated in chart. Use modulated output.

RADIO CONTROLS — Set volume control to maximum, and tuning control as indicated in chart.

OUTPUT LEVEL — During alignment, attenuate signal generator to maintain an output-meter indication below 1.5 volts.

DUMMY AERIAL — Connect signal-generator output lead through a 30- μ f. condenser to aerial socket; connect a 30- μ f. condenser from aerial socket to ground.

STEP	SIGNAL GENERATOR		RADIO		ADJUST TRIMMER
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .05- μ f. condenser to converter grid (pin 7 of 6BE6).	455 kc.	Maximum counterclockwise	Adjust cores, in order given, for maximum output. TC1 and TC3 are reached through holes in bottom of i-f transformers.	TC4—2nd i-f sec. TC3—2nd i-f pri. TC2—1st i-f sec. TC1—1st i-f pri.
2	Through dummy aerial.	1605 kc.	1605 kc.	Adjust for maximum output.	C5B—osc. trimmer C5A—r-f trimmer C1—aerial trimmer
3			Tune to weak station near 1600 kc.	Readjust trimmer C1, with radio installed in car and aerial fully extended.	C1—aerial trimmer



TPO-115Z

Figure 4. Philco Auto Radio Model CR-501, Schematic Diagram

SPECIFICATIONS

CIRCUIT	Six-tube superheterodyne
FREQUENCY RANGE	540—1605 kc.
AUDIO OUTPUT	3.2 watts
POWER INPUT	6.0 amperes at 6.6 volts, d.c.
INTERMEDIATE FREQUENCY	455 kc.
PHILCO TUBES (6)	6BA6 (2), 6BE6, 6AV6, 6AQ5, 6X4

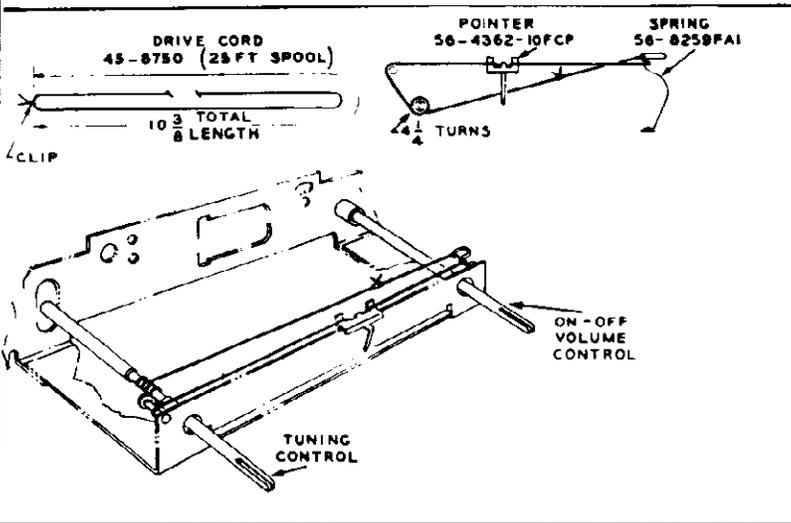


Figure 1. Drive-Cord Installation Details

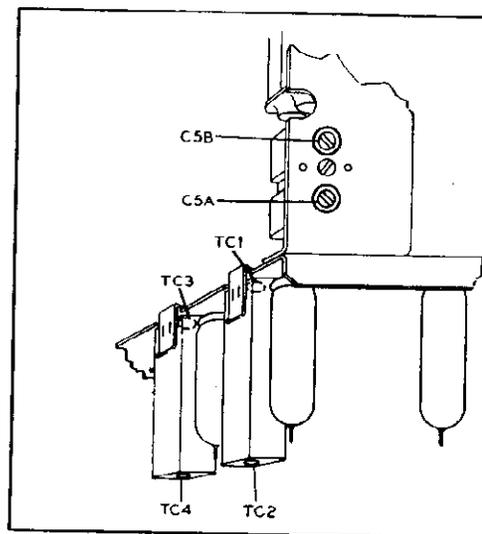


Figure 2. View Showing Trimmer Locations

ALIGNMENT PROCEDURE

OUTPUT METER — Connect across voice coil.

SIGNAL GENERATOR — Connect ground lead to chassis; connect output lead as indicated in chart. Use modulated output.

RADIO CONTROLS — Set volume control to maximum, and tuning control as indicated in chart.

OUTPUT LEVEL — During alignment, attenuate signal generator to maintain an output-meter indication below 1.5 volts.

DUMMY ANTENNA — Connect signal-generator output lead through a 30- μ i. condenser to antenna socket; connect a 30- μ i. condenser from antenna socket to ground.

STEP	SIGNAL GENERATOR		RADIO		ADJUST TRIMMER
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .05- μ f. condenser to converter grid (pin 7 of 6BE6).	455 kc.	Maximum counterclockwise	Adjust cores, in order given, for maximum output. TC1 and TC3 are reached through holes in bottom of i-f transformers.	TC4—2nd i-f sec. TC3—2nd i-f pri. TC2—1st i-f sec. TC1—1st i-f pri.
2	Through dummy antenna.	1605 kc.	Maximum clockwise	Adjust for maximum output.	C5B—osc. trimmer C5A—r-f trimmer C1—ant. comp.
3			Tune to weak station near 1600 kc.	Readjust trimmer C1, with radio installed in car and antenna fully extended.	C1—ant. comp.

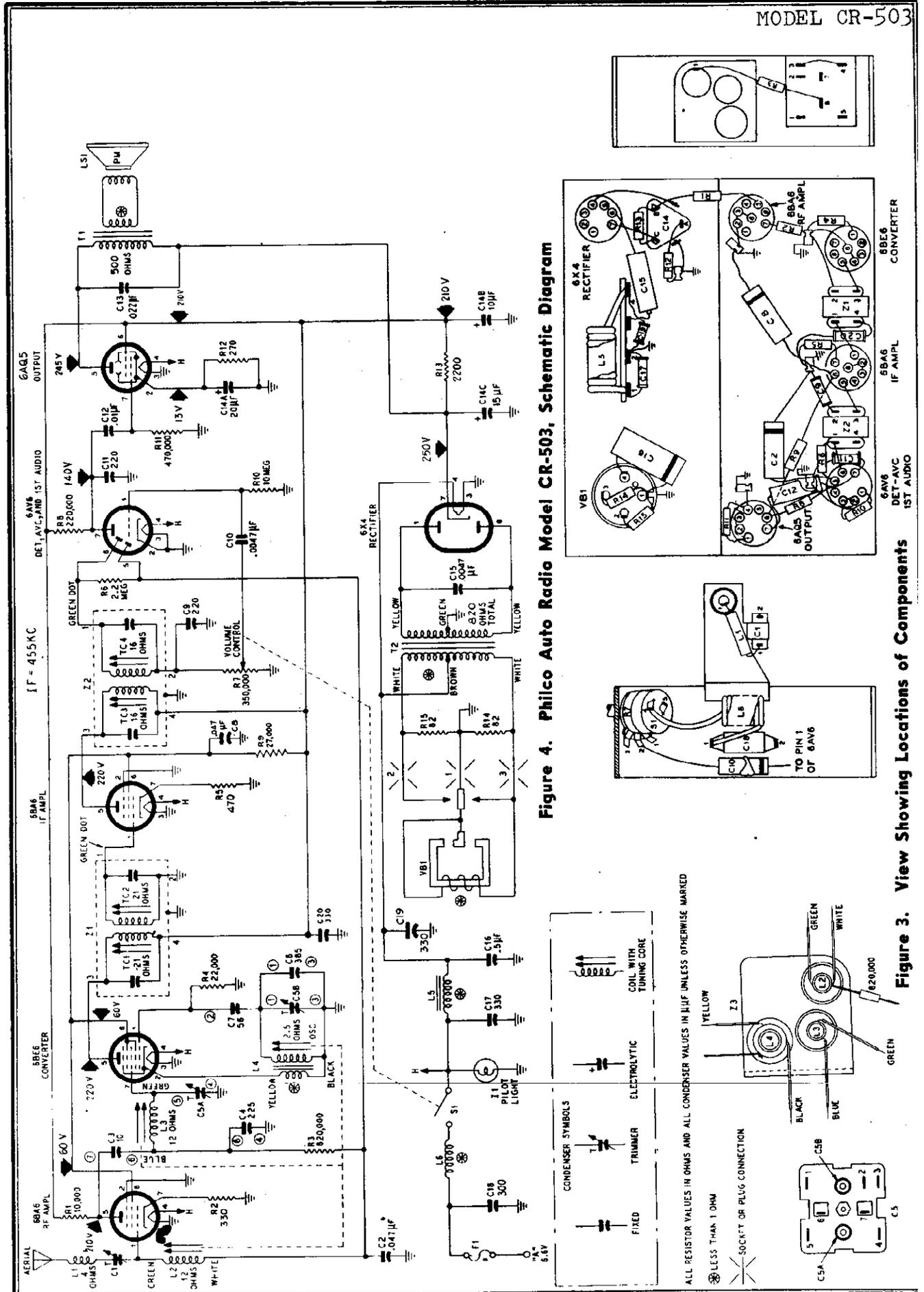


Figure 3. View Showing Locations of Components

Figure 4. Philco Auto Radio Model CR-503, Schematic Diagram

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) are general replacement items. These numbers may not be identical with those on factory parts. Also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and parts list. The values substituted in any case are so chosen that the operation will be either unchanged or improved. When ordering replacements, use only the "Service Part No."

Reference Symbol	Description	Service Part No.	Reference Symbol	Description	Service Part No.
C1	Condenser, antenna compensator	31-6502	R12	Resistor, cathode bias, 270 ohms, 1 watt	66-1274340*
C2	Condenser, a-v-c filter, .047 μ f.	45-3505-45*	R13	Resistor, filter, 2200 ohms, 1 watt	66-2224340*
C3	Condenser, d-c blocking, 10 μ f.	Part of C5	R14	Resistor, damping, 82 ohms, 1 watt	66-0824340*
C4	Condenser, r-f fixed trimmer, 225 μ f.	Part of C5	R15	Resistor, damping, 82 ohms, 1 watt	66-0824340*
C5	Condenser, 2-section trimmer	31-6522	S1	Switch, off-on	Part of R7
C5A	Condenser, r-f trimmer	Part of C5	T1	Transformer, output	32-8315-1
C5B	Condenser, oscillator trimmer	Part of C5	T2	Transformer, power	32-8437
C6	Condenser, fixed osc. trimmer, 385 μ f.	Part of C5	VB1	Vibrator	83-0025*
C7	Condenser, d-c blocking, 56 μ f.	Part of C5	Z1	Transformer, 1st i-f	32-4160-6A
C8	Condenser, by-pass, .047 μ f.	45-3505-45*	Z2	Transformer, 2nd i-f	32-4161A
C9	Condenser, i-f filter, 220 μ f.	62-122001001	Z3	Tuner, complete with coils and tuning cores	78-6011
C10	Condenser, d-c blocking, .0047 μ f.	45-3505-56*			
C11	Condenser, plate by-pass, 220 μ f.	62-122001001			
C12	Condenser, d-c blocking, .01 μ f.	45-3505-41*			
C13	Condenser, tone compensation, .022 μ f.	45-3505-60*			
C14	Condenser, 3-section electrolytic	61-0089A			
C14A	Condenser, cathode by-pass, 20 μ f.	Part of C14			
C14B	Condenser, filter, 10 μ f.	Part of C14			
C14C	Condenser, filter, 15 μ f.	Part of C14			
C15	Condenser, buffer, .0047 μ f., 1000v	30-4661-1*			
C16	Condenser, line filter, .5 μ f.	61-0137*			
C17	Condenser, hash filter, 330 μ f.	62-133001001			
C18	Condenser, hash filter, 300 μ f.	30-1235			
C19	Condenser, vibrator filter, 330 μ f.	62-133001001			
C20	Condenser, 330 μ f.	62-133001001			
F1	Fuse, 14-amp	45-2559			
I1	Pilot lamp, brown bead, bayonet, .15 amp. at 6.3v	34-2088			
L1	Choke, antenna	32-4422-24			
L2	Coil, antenna	Part of Z3			
L3	Coil, r-f	Part of Z3			
L4	Transformer, oscillator	Part of Z3			
L5	Choke, line filter	32-4170			
L6	Choke, "A" lead hash filter	32-1374			
LS1	Speaker	36-1638			
R1	Resistor, plate load, 10,000 ohms	66-3108340*			
R2	Resistor, cathode bias, 330 ohms	66-1338340*			
R3	Resistor, grid return, 820,000 ohms	66-4828340*			
R4	Resistor, grid return, 22,000 ohms	66-3228340*			
R5	Resistor, cathode bias, 470 ohms	66-1478340*			
R6	Resistor, diode load, 2.2 megohms	66-5228340*			
R7	Volume control, 350,000 ohms (with off-on switch)	33-5556-7			
R8	Resistor, plate load, 220,000 ohms	66-4228340*			
R9	Resistor, dropping, 27,000 ohms	66-3278340*			
R10	Resistor, grid return, 10 megohms	66-6108340*			
R11	Resistor, grid return, 470,000 ohms	66-4478340*			

MISCELLANEOUS

Description	Service Part No.
"A" lead	41-3910-11
Clip, grounding spring, brass (2 required)	57-1335
Clip, pilot-lamp mounting	56-3545-5FA3
Cover, top (tube side)	56-8274FJ52
Dial backplate	56-8273FA3
Drive cord, 25-foot spool	45-8750
Fuse lead	41-3910-12
Housing	76-6135-1FA2
Knob assembly (2 required)	27-4687-15
Master Kit	
Braid	95-0073
Condenser, interference filter	30-4007
Lock washer, No. 10 (2 required)	1W24258FA1
Resistor, distributor	33-1196
Screw, drive, No. 8, 1/2" long (4 required)	1W19752FA3
Screw, drive, slotted hex-head, No. 8 x 3/8" (2 required)	1W19751FA3
Screw, drive, slotted hex-head, No. 10 x 1 1/2"	1W19770FA3
Washer, No. 10, 1 1/4" diameter	1W52359FA3
Washer, flat (2 required)	1W52692FA3
Pilot-lamp assembly	27-6233-4
Pointer	56-4362-10
Socket, aerial	57-1243FA3
Socket, miniature with center shield	27-6203
Socket, miniature, without center shield	27-6203-12
Socket, speaker	27-6149
Socket, vibrator	27-6245
Spring, dial-cord	56-8259FA1
Strap, universal	56-4767FA3

SPECIFICATIONS

CIRCUIT	Six-tube superheterodyne
FREQUENCY RANGE	540—1605 kc.
AUDIO OUTPUT	3.2 watts
POWER INPUT	6.0 amperes at 6.6 volts, d.c.
INTERMEDIATE FREQUENCY	455 kc.
PHILCO TUBES (6)	6BA6 (2), 6BE6, 6AV6, 6AQ5, 6X4

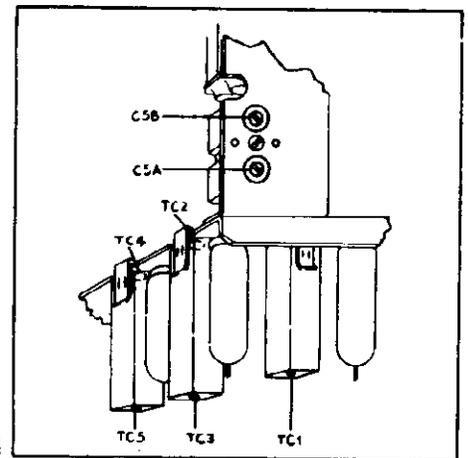
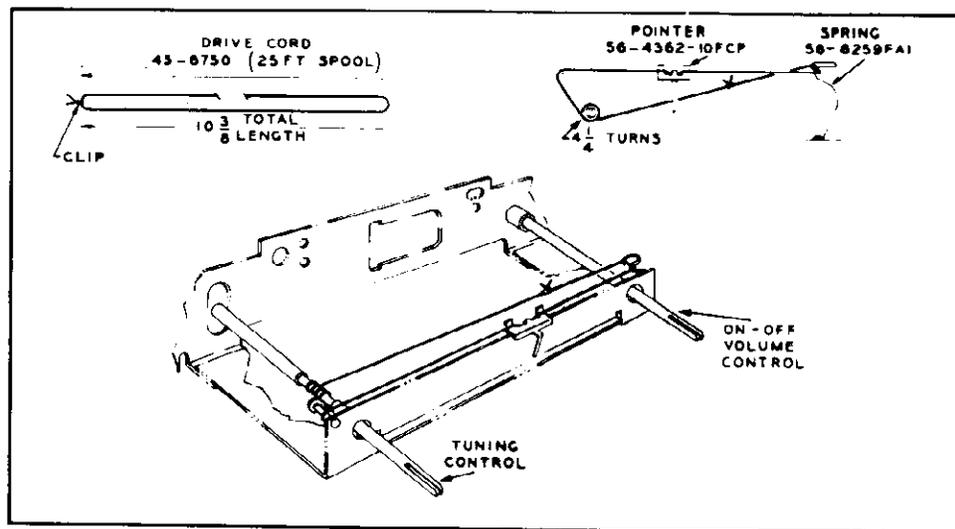


Figure 1. View Showing Trimmer Locations



TPQ-1189

Figure 2. Drive-Cord Installation Details

ALIGNMENT PROCEDURE

OUTPUT METER — Connect across voice coil.

SIGNAL GENERATOR — Connect ground lead to chassis; connect output lead as indicated in chart. Use modulated output.

RADIO CONTROLS — Set volume control to maximum, and tuning control as indicated in chart.

OUTPUT LEVEL — During alignment, attenuate signal generator to maintain an output-meter indication below 1.5 volts.

DUMMY ANTENNA — Connect signal-generator output lead through a 30- μ f. condenser to antenna socket; connect a 30- μ f. condenser from antenna socket to ground.

MODEL CR-505

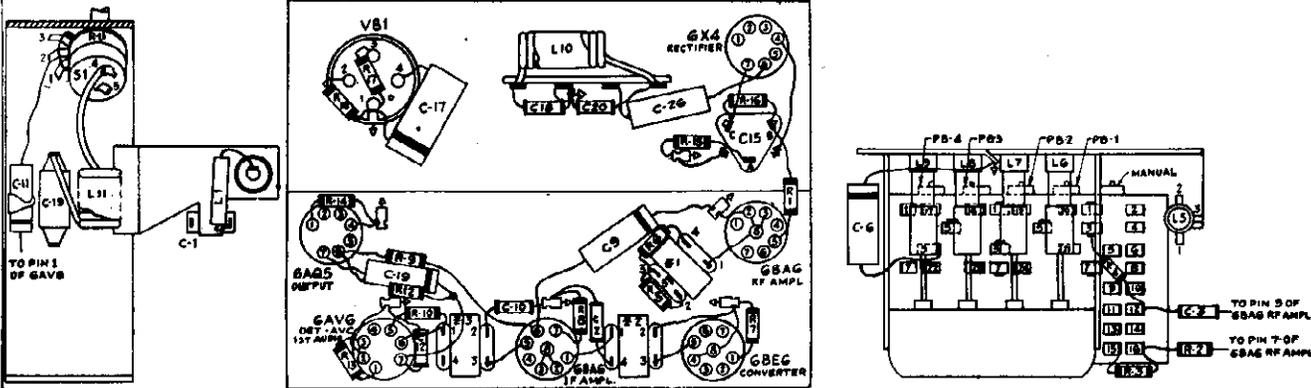


Figure 3. View Showing Locations of Components

STEP	SIGNAL GENERATOR		RADIO		ADJUST TRIMMER
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .05- μ f. condenser to converter grid (pin 7 of 6BE6).	455 kc.	Maximum counterclockwise	Adjust cores, in order given, for maximum output. TC5 and TC3 are reached through holes in bottom of i-f transformers.	TC5—2nd i-f sec. TC4—2nd i-f pri. TC3—1st i-f sec. TC2—1st i-f pri.
2	Through dummy antenna.	1605 kc.	Maximum clockwise	Adjust for maximum output.	C5B—osc. trimmer C5A—r-f trimmer C1—ant. comp.
3			Tune to weak station near 1600 kc.	Readjust trimmer C1; with radio installed in car and antenna fully extended.	C1—ant. comp.

PUSH BUTTON ALIGNMENT

Make the Manual alignment first.

STEP	SIGNAL GENERATOR		RADIO		ADJUST TRIMMER
	CONNECTION TO RADIO	DIAL SETTING	PUSH BUTTON	SPECIAL INSTRUCTIONS	
1	Through dummy antenna.	455 kc.	PB1	Adjust for minimum output.	TC1
2	Same as step 1.	730 kc.	PB1 and PB2	Tune for maximum output by turning core key. Then adjust for maximum with the hex-nut that holds core and osc. section to front frame. Re-centent.	
3	Same as step 2.	1000 kc.	PB3	Same as step 2.	
4	Same as step 2.	1200 kc.	PB4	Same as step 2.	
5	Same as step 2.	Frequency of desired station	PB1 PB2 PB3 PB4	Adjust by rotating core key. Adjust lowest frequency first.	
6	Repeat Step No. 5 with radio installed and antenna fully extended while listening to the station for which the adjustment is being made.				

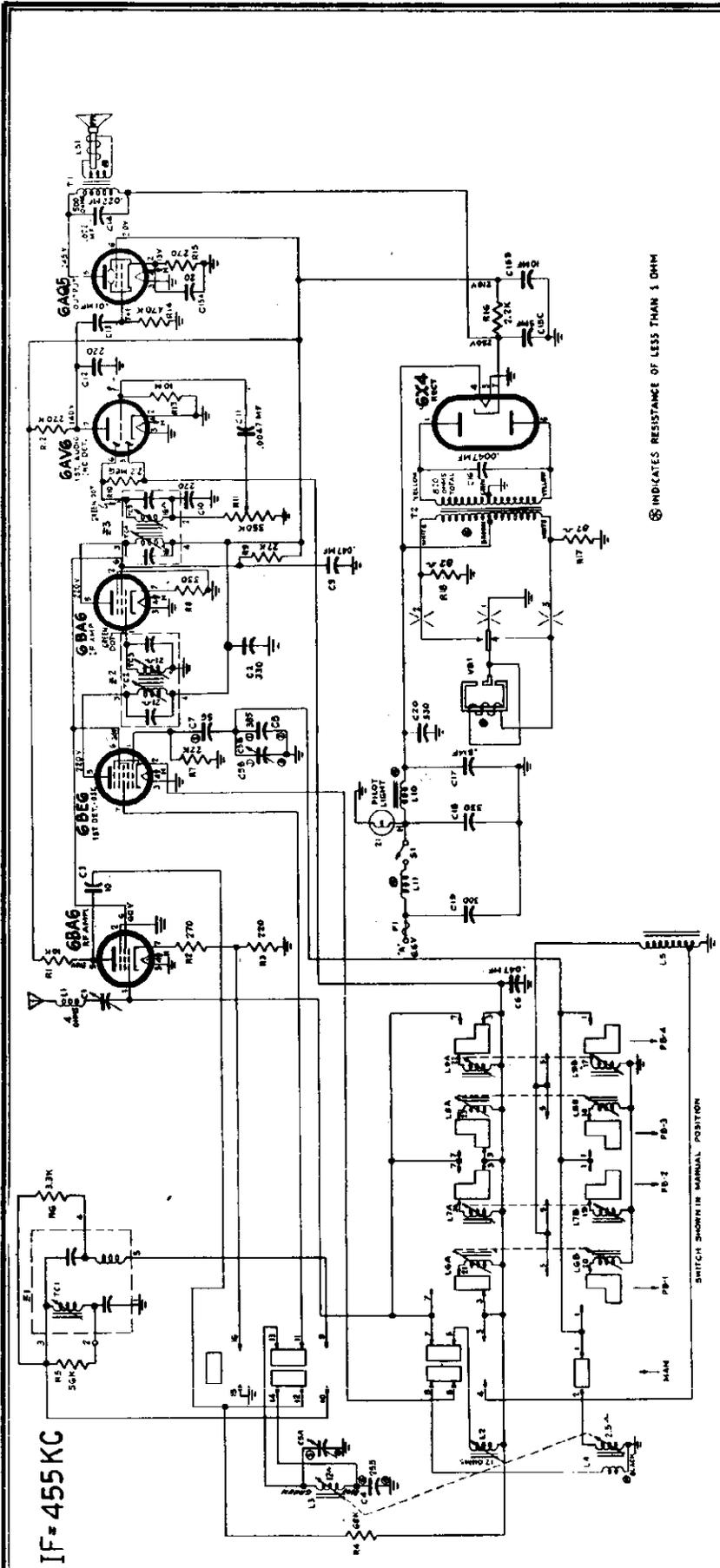
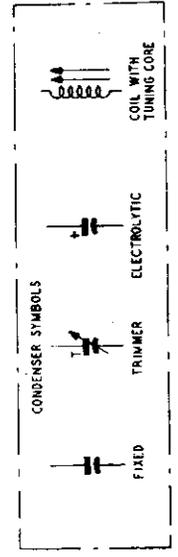
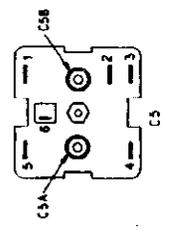
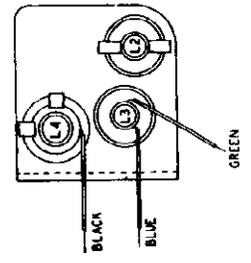


Figure 4. Philco Auto Radio Model CR-505, Schematic Diagram



CONDENSER SYMBOLS
 ALL RESISTOR VALUES IN OHMS AND ALL CONDENSER VALUES IN μ F UNLESS OTHERWISE MARKED
 ⊗ LESS THAN 1 OHM
 ✕ SOCKET OR PLUG CONNECTION



⊗ INDICATES RESISTANCE OF LESS THAN 1 OHM

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) are general replacement items. These numbers may not be identical with those on factory parts. Also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and parts list. The values substituted in any case are so chosen that the operation will be either unchanged or improved. When ordering replacements, use only the "Service Part No."

Reference Symbol	Description	Service Part No.	Reference Symbol	Description	Service Part No.
C1	Condenser, antenna compensator	31-6502	R13	Resistor, grid return, 10 megohms	66-6108340*
C2	Condenser, by-pass, 330 μ f.	62-133001001	R14	Resistor, grid return, 470,000 ohms	66-4478340*
C3	Condenser, d-c blocking, 10 μ f.	62-010009001*	R15	Resistor, cathode bias, 270 ohms, 1 watt	66-1274340*
C4	Condenser, fixed trimmer, 255 μ f.	Part of C5	R16	Resistor, filter, 2,200 ohms, 1 watt	66-2224340*
C5	Condenser, 4 sections fixed and 2 section variable trimmer	31-6522-1	R17	Resistor, vibrator damping, 82 ohms, 1 watt	66-0824340*
C5A	Condenser, r-f trimmer	Part of C5	R18	Resistor, vibrator damping, 82 ohms, 1 watt	66-0824340*
C5B	Condenser, osc. trimmer	Part of C5	S1	Switch, off-on	Part of R11
C6	Condenser, a-v-c by-pass, .047 μ f.	45-3505-45*	T1	Transformer, output	32-8315-1
C7	Condenser, d-c blocking, 56 μ f.	Part of C5	T2	Transformer, power	32-8457
C8	Condenser, fixed osc. trimmer, 385 μ f.	Part of C5	VB1	Vibrator	83-0025*
C9	Condenser, screen by-pass, .047 μ f.	45-3505-45*	Z1	Transformer, r-f	32-4349
C10	Condenser, i-f by-pass, 220 μ f.	62-122001001	Z2	Transformer, 1st i-f	32-4160-6A
C11	Condenser, d-c blocking, .0047 μ f.	45-3505-56*	Z3	Transformer, 2nd i-f	32-4161A
C12	Condenser, plate by-pass, 220 μ f.	62-122001001			
C13	Condenser, d-c blocking, .01 μ f.	45-3505-41*			
C14	Condenser, tone compensation, .022 μ f.	45-3505-60*			
C15	Condenser, electrolytic, 3 section	61-0089A			
C15A	Condenser, cathode by-pass, 20 μ f.	Part of C15			
C15B	Condenser, filter, 10 μ f.	Part of C15			
C15C	Condenser, filter, 15 μ f.	Part of C15			
C16	Condenser, buffer, .0047 μ f., 1600v	30-4661-1			
C17	Condenser, vibrator damping, .5 μ f.	61-0137			
C18	Condenser, hash filter, 330 μ f.	62-133001001			
C19	Condenser, hash filter, 300 μ f.	30-1235			
C20	Condenser, vibrator filter, 330 μ f.	62-133001001			
F1	Fuse, 14 amp.	45-2559			
I1	Pilot lamp, brown bead, bayonet, .15 amp. at 6.3v	34-2068			
L1	Choke, antenna	32-4422-24			
L2	Coil, antenna	Part of Z4			
L3	Coil, r-f	Part of Z4			
L4	Coil, oscillator	Part of Z4			
L5	Coil, osc. shunt	Part of Z5			
L6A, L7A, L8A, L9A	Coil, push button r-f	Part of Z5			
L6B, L7B, L8B, L9B	Coil, push button oscillator	Part of Z5			
L10	Choke, line filter	32-4170			
L11	Choke, "A" lead hash filter	32-1374			
LS1	Speaker	36-1638			
R1	Resistor, plate load, 10,000 ohms	66-3108340*			
R2	Resistor, cathode bias, 270 ohms	66-1278340*			
R3	Resistor, cathode bias, 220 ohms	66-1228340*			
R4	Resistor, grid return, 68,000 ohms	66-3688340*			
R5	Resistor, r-f primary loading, 56,000 ohms	66-3568340*			
R6	Resistor, band pass, 3,300 ohms	66-2338340*			
R7	Resistor, grid return, 22,000 ohms	66-3228340*			
R8	Resistor, cathode bias, 330 ohms	66-1338340*			
R9	Resistor, screen dropping, 27,000 ohms	66-3278340*			
R10	Resistor, diode load, 2.2 megohms	66-5228340*			
R11	Volume control, 350,000 ohms	33-5556-8			
R12	Resistor, plate load, 220,000 ohms	66-4228340*			

MISCELLANEOUS

Description	Service Part No.
"A" lead	41-3910-11
Clip, ground spring (2)	57-1335
Cover, top, tube side	56-8274FJ52
Dial Backplate	56-8273FA3
Dial cord, 25-foot spool	45-8750*
Spring, drive cord	56-8259FA1
Fuse lead	41-3910-12
Housing Assembly	76-6135-1FA2
Knob assembly (2)	27-4687-15
Master Kit	
Braid	95-0073
Condenser, interference filter	30-4007
Resistor, distributor	33-1196
Screw, No. 10 x 1-1/2" slotted hex-head drive, strap to fire wall	1W19770FA3
Screw, No. 8 x 1/2" slotted hex-head drive, speaker to plate (4)	1W19752FA3
Screw, No. 8 x 3/8" slotted hex-head drive, strap to set	1W19751FA3
Washer, No. 10 x 1-1/4" diam., .056" thick for No. 10 screw	1W52359FA3
Nut, bezel mounting (2)	56-8464FA7
Pilot lamp assembly	27-6233-4
Clip, pilot lamp mounting	56-3545-5FA3
Pointer	56-4362-10
Push button and key assembly (station buttons) (4)	76-6239
Push button and key assembly (manual)	76-6239-1
Socket, aerial	57-1243FA3
Socket, miniature, with center shield (3)	27-6203
Socket, miniature, without center shield (3)	27-6203-12
Socket, speaker	27-6149
Socket, vibrator	27-6245
Strap, universal, set mounting	56-4767FA3
Tuner, manual	76-6011-1
Tuner and switch assembly, push button, complete	76-5940
Tuner and switch assembly	76-6053

Production Changes

The following changes occurred early in production but were not identified by run number.

C10, the .022 *uf* tone compensation condenser, is now .0068 *uf* part number 45-3505-57*.

The wiring of C9 is reversed to use C9B, 220 *uf* section, as plate by-pass for the 7C6, C9A, the .007 *uf* section is still used as the d-c blocking.

SPECIFICATIONS

CABINET	Molded plastic, mottled mahogany
CIRCUIT	Five-tube superheterodyne
FREQUENCY RANGE	540—1620 kc.
AUDIO OUTPUT	One watt
OPERATING VOLTAGE	105—120 volts, 60 cycles, a.c.
POWER CONSUMPTION	
Radio	30 watts
Phonograph	45 watts
INTERMEDIATE FREQUENCY	455 kc.
AERIAL	Built-in high-impedance loop; provision for external aerial
PHILCO TUBES (5)	7A8 converter, 7B7 1-f amplifier, 7C6 2nd det. 1st audio, 50L6GT output, 35Z5GT rectifier
PHONOGRAPH	Philco Model M-22 All-Speed Automatic Record Changer. (For service information, refer to Service Manual PR-1923.)

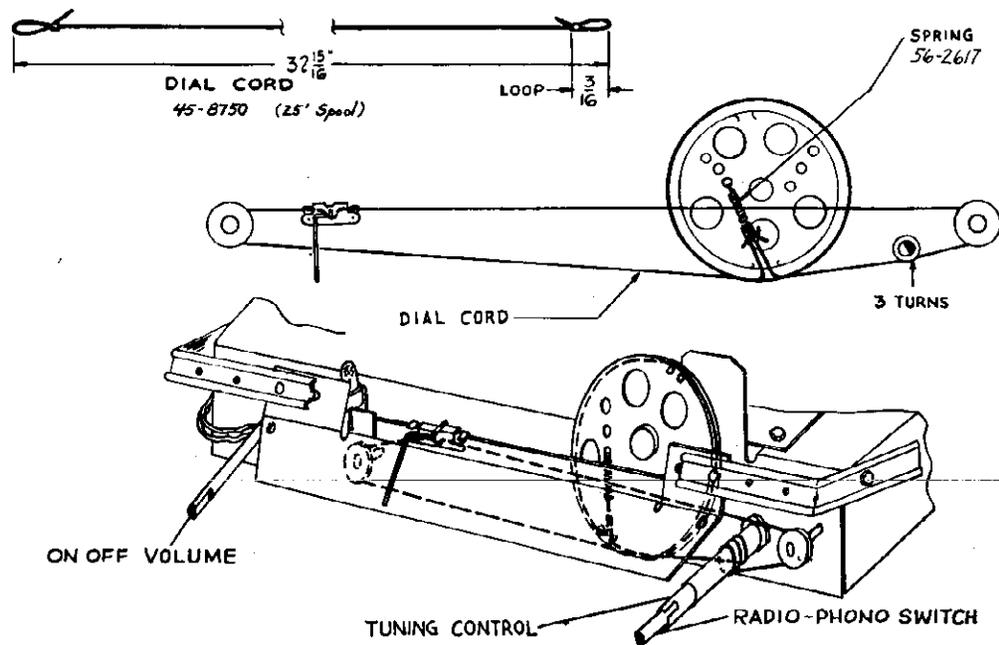


Figure 1. Drive-Cord Installation Details

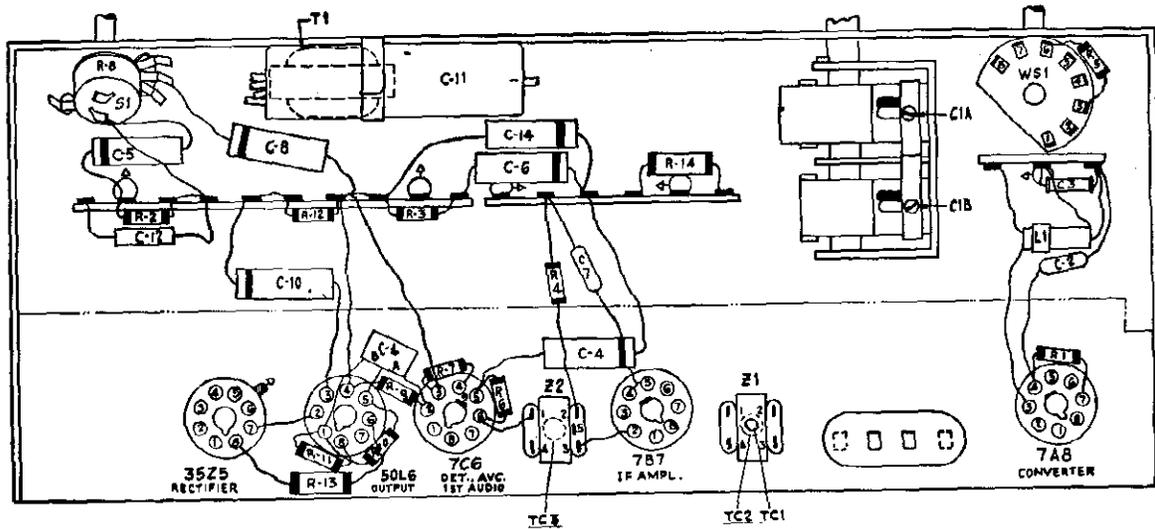


Figure 2. Base View, Showing Parts Placement and Alignment Points

ALIGNMENT PROCEDURE

DIAL POINTER—Turn tuning condenser to full-mesh position. Set dial pointer to the index mark, located to the left of "55".

CONTROLS—Set volume control to maximum, "Phono-Radio" switch to Radio position, and the tuning control as indicated in the chart.

OUTPUT METER—Connect across voice coil terminals.
SIGNAL GENERATOR—Ground lead to B-, output lead as indicated in chart.

OUTPUT LEVEL—During alignment, attenuate signal-generator output to hold output-meter indication below 1.25 volts.

STEP	SIGNAL GENERATOR		RADIO		ADJUST TRIMMER
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through a .01 μ f. condenser to pin #8 of the 7A8 converter tube.	455 kc.	Gang fully closed.	Adjust in order given, for maximum output. TC2 and TC3 are located at the top of the transformers.	TC3—2nd 1-f sec. TC2—1st i-f sec. TC1—1st 1-f pri.
2	Radiating loop (see note below).	1600 kc.	1600 kc.	Adjust for maximum.	C1B—osc. trimmer
3	Same as Step 2.	1500 kc.	1500 kc.	Adjust for maximum.	C1A—ant. trimmer

RADIATING LOOP: Make up a 6-8-turn, 8-inch-diameter loop from insulated wire, connect to signal generator output leads, and place near radio loop.

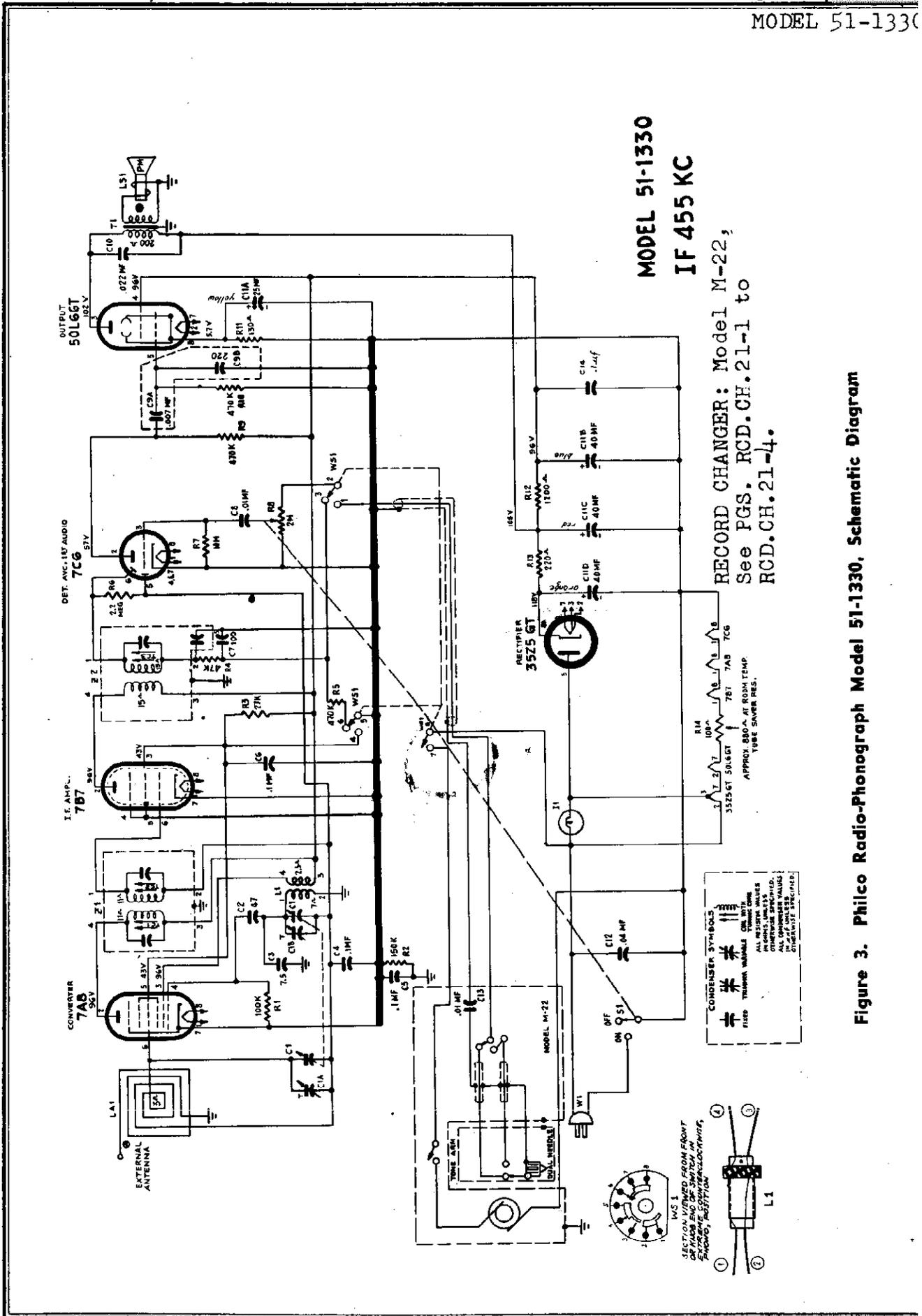


Figure 3. Philco Radio-Phonograph Model 51-1330, Schematic Diagram

MODEL 51-1330

CORRECTIONS TO MANUAL

Drive-Cord Installation Details

The spring, part number 56-2617 should be shown as terminating in the middle hole of the drive drum.

Run No. 2

The 2nd i-f transformer, Z2, is now part number 32-4240. This transformer is double tuned and has two 100 μf . i-f filter condensers built-in. The transformer wiring is shown in figure 4.

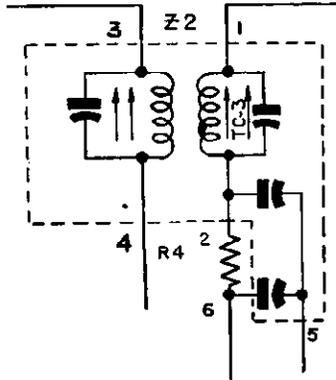


Figure 4. Run 2 I-F Transformer

Also, the 1st i-f transformer, Z1, is reversed. The transformer is rotated 180° on the chassis and the wiring is as follows: No. 1 is plate, No. 2 is B+, No. 3 is grid, No. 4 is $\alpha\text{-v-c}$.

REPLACEMENT PARTS LIST

NOTE: Part numbers marked with an asterisk (*) are general replacement items. These numbers may not be identical with those on factory assemblies; also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and parts list. The values substituted in any case are so chosen that the operation of the receiver will be either unchanged or improved. When ordering replacements, use only the "Service Part No."

Reference Symbol	Description	Service Part No.
C1	Condenser, tuning gang	31-2751-9
C2	Condenser, osc. grid, d-c blocking, 47 μf .	60-00515307*
C3	Condenser, temperature compensating, 7.5 μf .	30-1224-65
C4	Condenser, $\alpha\text{-v-c}$ by-pass, .1 μf .	61-0113*
C5	Condenser, by-pass, .1 μf .	61-0113*
C6	Condenser, screen by-pass, .1 μf .	61-0113*
C7	Condenser, i-f filter, 100 μf .	62-110009001*
C8	Condenser, d-c blocking, .01 μf .	61-0120*
C9	Condenser, dual ceramic	30-1239-4
C9A	Condenser, d-c blocking, .007 μf .	Part of C9
C9B	Condenser, grid by-pass, 220 μf .	Part of C9
C10	Condenser, tone compensation, .022 μf .	45-3505-43*
C11	Condenser, electrolytic, 4 section	30-2575-32*
C11A	Condenser, cathode by-pass, 25 μf .	Part of C11
C11B	Condenser, filter, 40 μf .	Part of C11
C11C	Condenser, filter, 40 μf .	Part of C11
C11D	Condenser, filter, 40 μf .	Part of C11
C12	Condenser, line by-pass, .04 μf .	45-3505-62*

Reference Symbol	Description	Service Part No.
C13	Condenser, phono isolation, .01 μf .	61-0120*
C14	Condenser, r-f by-pass, .1 μf .	61-0113*
I1	Pilot lamp, type 47	34-2068
L1	Coil, oscillator	32-4263
LA1	Loop antenna	76-2127-11
LS1	Speaker, 5 1/4" round	36-1639
R1	Resistor, grid return, 100,000 ohms	66-4108340*
R2	Resistor, leakage, 150,000 ohms	66-4158340*
R3	Resistor, dropping, 27,000 ohms	66-3274340*
R4	Resistor, i-f filter, 47,000 ohms	66-3478340*
R5	Resistor, diode return, 470,000 ohms	66-4478340*
R6	Resistor, diode load, 2.2 megohms	66-5228340*
R7	Resistor, grid return, 10 megohms	66-6108340*
R8	Volume control, 2 megohms (with switch)	33-5564-11
R9	Resistor, plate load, 470,000 ohms	66-4478340*
R10	Resistor, grid return, 470,000 ohms	66-4478340*
R11	Resistor, cathode bias, 130 ohms	66-1128340*
R12	Resistor, filter, 1200 ohms	66-2128340*
R13	Resistor, filter, 220 ohms, 2 watts	66-1225340*
R14	Resistor, surge limiting, 880 Ω cold, 100 Ω hot	33-1343-3
S1	Switch, off-on	Part of R8
T1	Transformer, output	32-8384*
W1	Line cord	L-2183
WS1	Wafer switch, radio-phono	42-1949
Z1	Transformer, 1st i-f	32-4160A
Z2	Transformer, 2nd i-f	32-4454-1A

MISCELLANEOUS

Description	Service Part No.
Backplate assembly	76-6232
Cabinet, complete	10840-2
Hinge (2)	56-6603
Lid	54-4838
Lid support	56-6604
Changer Mounting Hardware	
Sleeve, rubber (3)	54-7798
Speed nut (3)	W-2554
Spring, heavy, top (3)	56-7059FA9
Spring, light, bottom (3)	56-7059-1FJ47
Dial scale	54-5107
Knob, off-on-volume	54-4843
Knob, phono-radio	54-4842
Knob, tuning	54-4841
Pilot lamp socket assembly	76-1179-1
Fastener, pilot lamp shield	W2235-1FA9
Pointer	56-5630-31
Spring, pointer drive	56-2617
Socket, Loktal (3)	27-6207
Socket, octal (2)	27-6174
Tuning shaft	56-8370

PRIVAT-EAR INSTRUCTION AND
SERVICE NOTES

OPERATION - To place the PRIVAT-EAR radio in operation, pull out the plastic bead on top of case. This extends the built-in telescopic antenna. When all four telescoping sections are exposed, the receiver power is automatically turned "ON". The radio is turned "OFF" by pushing the plastic bead down until all sections of the telescopic antenna are inside the case.

Note: The set is not turned "ON" and "OFF" by means of volume control knob.

EARPHONE - Place earphone on ear so that it fits comfortably.

VOLUME CONTROL - This control appears above the VOL marking on the case. Turn the knob about 3/4 of its full clockwise rotation.

STATION SELECTOR - The right hand knob is the stations elector. Numbers 6 and 9 and 16 on the case correspond to approximately 600, 900 and 1600 kilocycles. Turn knob slowly until maximum volume of desired station is obtained. Adjust the volume control to desired volume.

NOTE: DO NOT TRY TURNING SET "ON" OR "OFF" BY ROTATING VOLUME CONTROL BEYOND STOP.

RECOMMENDED SERVICE PROCEDURE

1. Set Does Not Work:

- a) Remove bottom half of back and check batteries.
- b) With antenna fully extended, press down on metal contact which is actuated by antenna section. If set plays when the contact is pressed, it indicates a dirty contact or insufficient pressure. A slight bend near the riveted section of this contact will increase the pressure.

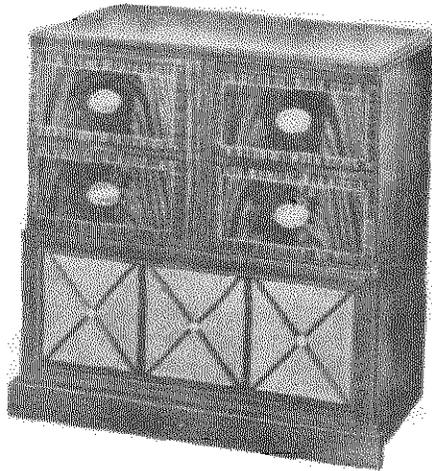
2. Set Performs, But Is Weak:

- a) Check batteries.
- b) Set may be operating in a poor reception area.
- c) Antenna may not be extended fully.

3. Receiver Alignment:

NOTE: The receiver was properly aligned before it left the factory. Actual alignment will be required if a coil is being replaced or if it has become loose.

- a) Remove upper half of back of case.
- b) Adjust modulated signal generator to 1600 kilocycles.
- c) Place "hot" side of generator output lead about 2 inches away from telescopic antenna.
- d) Turn station selector knob so that iron slugs are as far as possible outside the coils.
- e) Move each coil relative to the slug until maximum signal from the signal generator is heard.
- f) Carefully fasten coils to plastic chassis, using a quick drying radio cement.



Specifications

Tuning Range

Standard Broadcast (AM) 540-1,600 kc.
 Frequency Modulation (FM) 88-108 mc.
 Intermediate Frequencies AM—455 kc., FM—10.7 mc.

Tube Complement

(1) RCA 6CB6 R-F Amplifier
 (2) RCA 6J6 Mixer and Oscillator
 (3) RCA 6BA6 I-F Amplifier
 (4) RCA 6AU6 Driver
 (5) RCA 6AL5 Ratio Detector
 (6) RCA 6AV6 AM Det.—AVC—A-F Amplifier
 (7) RCA 6C4 Ph. Inv.
 (8) RCA 6V6GT Output
 (9) RCA 6V6GT Output
 (10) RCA 5Y3GT Rectifier

Dial Lamps (2) Type No. 51, 6-8 volts, 0.2 amp.
 Jewel Lamp Type No. 51, 6-8 volts, 0.2 amp.

Tuning Drive Ratio 10:1 (5 turns of knob)

Power Supply Rating 115 volts, 60 cycles, 115 watts

Loudspeaker (92569-12W)

Size and type 12 in. PM
 Voice coil impedance 3.2 ohms at 400 cycles

Power Output

(Radio) Undistorted 8 watts Maximum 9 watts
 (Phono) Undistorted 10 watts Maximum 11 watts

Weight 97 lbs.

Cabinet Dimensions

Height 32 in. Width 32 in. Depth 19 3/4 in.

Record Changer (RP-190-2)

Turntable speed 45 r.p.m.
 Pickup (RP-190—Stock No. 75575) Crystal

Record Changer 960282-4 or 5

Turntable speed 78 or 33 1/3 r.p.m.
 Pickup (Stock No. 75475) Crystal

FOR RECORD CHANGER SERVICE INFORMATION REFER TO RP-190 SERIES SERVICE DATA FOR 45 R.P.M. AND MODEL 960282 SERVICE DATA FOR 78/33 1/3 R.P.M.

Socket Voltages

Voltages measured with Chanalyst or VoltOhmyst and should hold within $\pm 20\%$ with rated line voltage. Tuning condenser closed—no signal input.

Tube	Terminal	Voltage		
		Phono	A.M.	F.M.
V1 6CB6 R.F. Amp.	Plate 5	—	203	132
	Screen 6	—	48	39
	Cathode 2	—	0.2	0.2
	Grid 1	—	-1.1	-0.9
V2 6J6 Mixer and Osc.	Plate 2	—	55	51
	Grid 5	—	-1.4	-1.2
	Plate 1	—	33	27
	Grid 6	—	-2.1	-1.9
V3 6BA6 I.F. Amp.	Plate 5	—	192	188
	Screen 6	—	106	101
	Cathode 7	—	0.9	—
	Grid 1	—	-1.1	-0.35
V4 6AU6 Driver	Plate 5	—	186	180
	Screen 6	—	122	120
	Cathode 7	—	1.05	1.07
V5 6AL5 Ratio Det.	—	—	—	—
V6 6AV6 A.F. Amp.	Plate 7	112	94	94
	Grid 1	-0.7	-0.7	-0.7
V7 6C4 Ph. Inverter	Plate 1-5	125	87	85
	Grid 6	-19.2	-16	-16
	Cathode 7	-11.1	-11.4	-11.4
V8 6V6GT or Output V9	Plate 3	305	295	298
	Screen 4	299	208	204
	Grid 5	-19.2	-16	-16
V10 5Y3GT Rectifier	Filament 2	314	313	313

Cathode Currents (Ma.)

Tube	Terminal	Phono	A.M.	F.M.
V1 6CB6	2	—	3	3
V2 6J6	7	—	2.6	2.6
V3 6BA6	7	—	13.2	14.7
V4 6AU6	7	—	9.3	9
V5 6AL5	1 & 5	—	—	—
V6 6AV6	2	0.8	0.5	0.5
V7 6C4	7	2.2	1.5	1.5
V8 6V6GT	8	35.6	17.8	17.7
V9 6V6GT	8	35.6	17.8	17.7
V10 5Y3GT	2	74.2	73.6	74.2

MODEL A-701,
Ch. RC-1096

ALIGNMENT PROCEDURE—CIRCUIT DESCRIPTION—LEAD DRESS

Alignment Procedure

CORRECT ALIGNMENT OF THE FM BAND
REQUIRES THAT THE AM BAND BE
ALIGNED FIRST

Alignment Indicators:

An RCA VoltOhmyst or equivalent meter is necessary for measuring developed d-c voltage during FM alignment. Connections are specified in the alignment tabulation. An output meter is also necessary to indicate minimum audio output during FM Ratio Detector alignment. Connect the output meter across the speaker voice coil.

The RCA VoltOhmyst can also be used as an AM alignment indicator, either to measure audio output or to measure a-v-c voltage.

When audio output is being measured the volume control should be turned to maximum.

Signal Generator:

For all alignment operations connect the low side of the signal generator to the receiver chassis. The output should be adjusted to provide accurate resonance indication at all times. If output measurement is used for AM alignment the output of the signal generator should be kept as low as possible to avoid a-v-c action.

Circuit Description

This instrument has a ten-tube (including rectifier) chassis which is very similar to those used in other RCA Victor radio-phonograph combinations designed for AM-FM reception.

The selector switch has five functions:

- (1) Selection of tuning range.
- (2) Selection and distribution of a.v.c. voltages.
- (3) Application of B+ voltage to tubes.
- In "Phono 78/33" and "Phono 45" positions the B+ voltage is removed from tubes V1, V2, V3 and V4.
- (4) Selection of audio input applied to the volume control.
- (5) Change in output tube bias.

In Radio positions R6 is in parallel with R42.

This receiver has built-in antennas for standard broadcast (AM) and frequency modulation (FM) reception.

Provision is made for the use of external antennas if desired.

Critical Lead Dress

Note: The leads listed may not be critical in all receivers. However, by dressing the leads as specified, unusual difficulties will be minimized.

1. The 2.2 meq mixer grid resistor (R10) should have a minimum practicable amount of lead extending on the grid end.
2. The first A.M. and first F.M. I.F. plate leads should be dressed away from the range switch wafer.
3. The ground strap between the R.F. shelf and the main chassis should be well soldered and kept as short as practicable.
4. Arrange wiring to prevent the filament wire between the mixer (6J6) and 1st I.F. (6BA6) tubes from passing near either the mixer grid, or the A.V.C. wiring.
5. Dress filament wires away from all audio coupling condensers.
6. Dress A.C. power switch wires away from the audio coupling condenser (C20) which is wired to the volume control.

7. Dress the mixer grid coupling condenser (C7) away from the lugs on the front range switch wafer.
8. The 1st I.F. tube A.V.C. by-pass condenser (C16) should ground at the same point as the cathode neutralizing loop.
9. The driver tube plate and screen by-pass condensers (C27, C28) should ground at the same point as the neutralizing loop.
10. The mixer plate by-pass condenser (C15) should ground as close to the R.F. shelf ground strap as practicable.
11. The shielded audio leads connecting to the front function switch wafer should have a minimum of exposed lead on the function switch end.

FM Alignment

FUNCTION SWITCH IN FM POSITION—VOLUME
CONTROL MAXIMUM

Steps	Connect high side of sig. gen. to—	Sig. gen. output	Turn radio dial to—	Adjust for max. output
1	Connect the d-c probe of a VoltOhmyst to the negative lead of the 2 mid. capacitor C40 and the common lead to chassis. Adjust sig. gen. output to provide approx. —3 v. indication during alignment.			
2	Pin #1 of 6AU6 (V4) in series with .01 mf.	10.7 mc AM modulated	—	Top of driver trans. T5 for max. d-c voltage
3				† Bottom of driver trans. T5 for min. audio output
4	Repeat steps 2 and 3			
5	Thru 470 ohms to C1-3. Connect gnd. end of cable close to V2 cathode ground on r-f shelf	10.7 mc	88 mc	* Top (sec.) & bottom (pri.) cores of T3 * Top (sec.) & bottom (pri.) cores of T3
6		90 mc	90 mc	L8 (osc.)
7	To FM antenna terminals thru 120 ohms in each side of line	106 mc	106 mc Signal	C1-6 trimmer (ant.) and C1-3 trimmer (r. f.)
8		90 mc	90 mc Signal	L1 (ant.) and L2 (r. f.)
9	Repeat steps 6, 7 and 8			
10	Connect a sweep generator to the antenna terminals thru 120 ohms in each side of line. Connect an oscilloscope to junction of R44 and C41 to check response and linearity of FM band. Peak to peak separation should not be less than 180 kc.			

† Two or more points may be found which lower the audio output. At the correct point the minimum audio output is approached rapidly and is much lower than at any incorrect point.

* Use a 680 ohm resistor to load the plate winding while the grid winding of the same trans. is being peaked. Then the grid winding is loaded with the 680 ohm resistor while the plate winding is being peaked. When windings are loaded, it is necessary to increase the 10.7 mc input to maintain the —3 volts indication.

L8, L1 and L2 are adjustable by increasing or decreasing the spacing between turns. Oscillator signal tracks above signal frequency.

AM Alignment

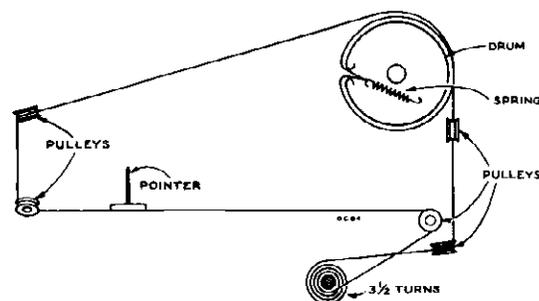
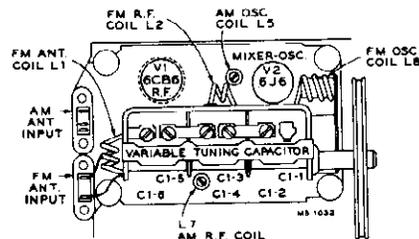
FUNCTION SWITCH IN AM POSITION

Steps	Connect high side of sig. gen. to—	Sig. gen. output	Turn radio dial to—	Adjust for max. output
1	Stator of C1-4	455 KC	Quiet point at low freq. end.	† Bottom (sec.) & top (pri.) cores of T4 † Top (sec.) & bottom (pri.) cores of T2
2	AM ant. terminal thru 200 mmf.	1620 KC	Extreme high frequency end.	C1-2 trimmer (osc.)
3		1400 KC	1400 KC Signal	C1-4 trimmer (r. t.) C1-5 trimmer (ant.)
4		800 KC	800 KC Signal	‡ L5 (osc.) L7 (r. l.)
5	Repeat steps 2, 3 and 4			

† First peak T2 and T4 then starting with T4, use alternate loading. Connect a 47,000-ohm resistor across the primary to load the plate winding while the grid winding of the same transformer is being peaked. Then load the grid winding with the 47,000-ohm resistor while the plate winding is being peaked.

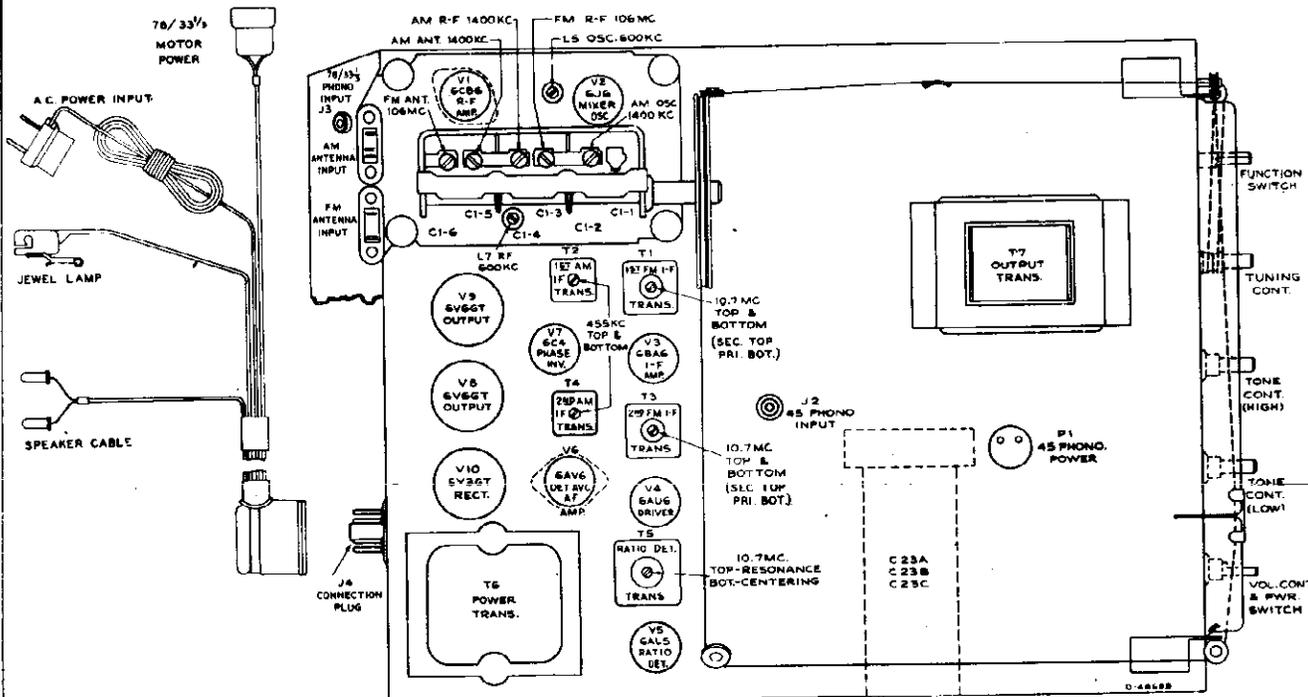
‡ With a 10,000-ohm resistor shunted across C1-4, peak the oscillator core L5, simultaneously "rocking" the gang condenser for maximum output. Then, remove the 10,000-ohm shunt resistor and peak L7 for maximum output.

F. M. Coil Locations



Dial Cord and Drive Assembly

TUBE AND TRIMMER LOCATIONS



Tube and Trimmer Locations

MODEL A-101,
Ch. RC-1096

MISC. SERVICE INFORMATION—REPLACEMENT PARTS

Record Changer Mounting

Each record changer is mounted in a roll-out carriage. The changer mechanisms are mounted on rubber grommets (45 r.p.m.) or springs (78/33 r.p.m.) and should be free floating.

Two shipping screws hold the 45 r.p.m. changer to its roll-out carriage. They are accessible from the under-side of the carriage and should be REMOVED at time of installation.

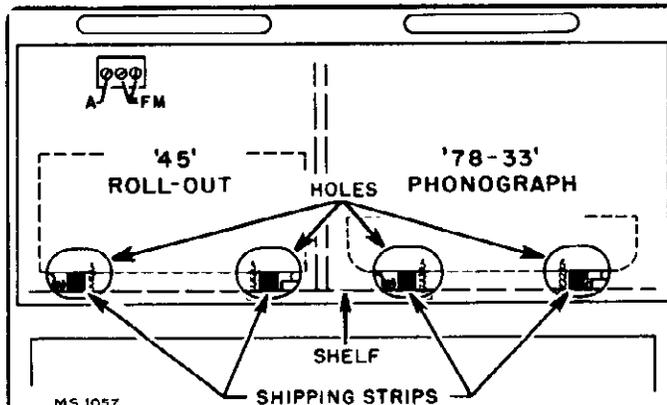
Two shipping screws hold the 78/33 r.p.m. changer to its roll-out carriage. They are accessible after the turntable is lifted off and should be LOOSENED at time of installation.

Roll-out Carriage Removal

Each roll-out carriage has two stop pins, (one at the back end of each slide) held in place by retaining spring. To remove roll-out carriage, it is first necessary to pull the retaining springs out of the slides with a pair of long nose pliers, the stop pins are then easily removed. The roll-out carriage may then be removed from the front of the cabinet after disconnecting its connecting cables.

Roll-out Carriage Travel

The roll-out carriages have a normal movement limitation of approximately 10 inches. If they do not have this amount of movement, it may be due to an obstruction or from slippage or creeping of the balls of the slide mechanism. Travel restriction due to slippage or creeping of balls in the slide mechanism can be corrected by exerting slightly greater pull until the normal travel limitation is reached. The carriage should then operate to its full travel with normal pull.



Before attempting to operate mechanism remove shipping bolts and strips. Slide shipping strips out through the elongated holes which have been cut in the cabinet back cover.

Replacement Parts

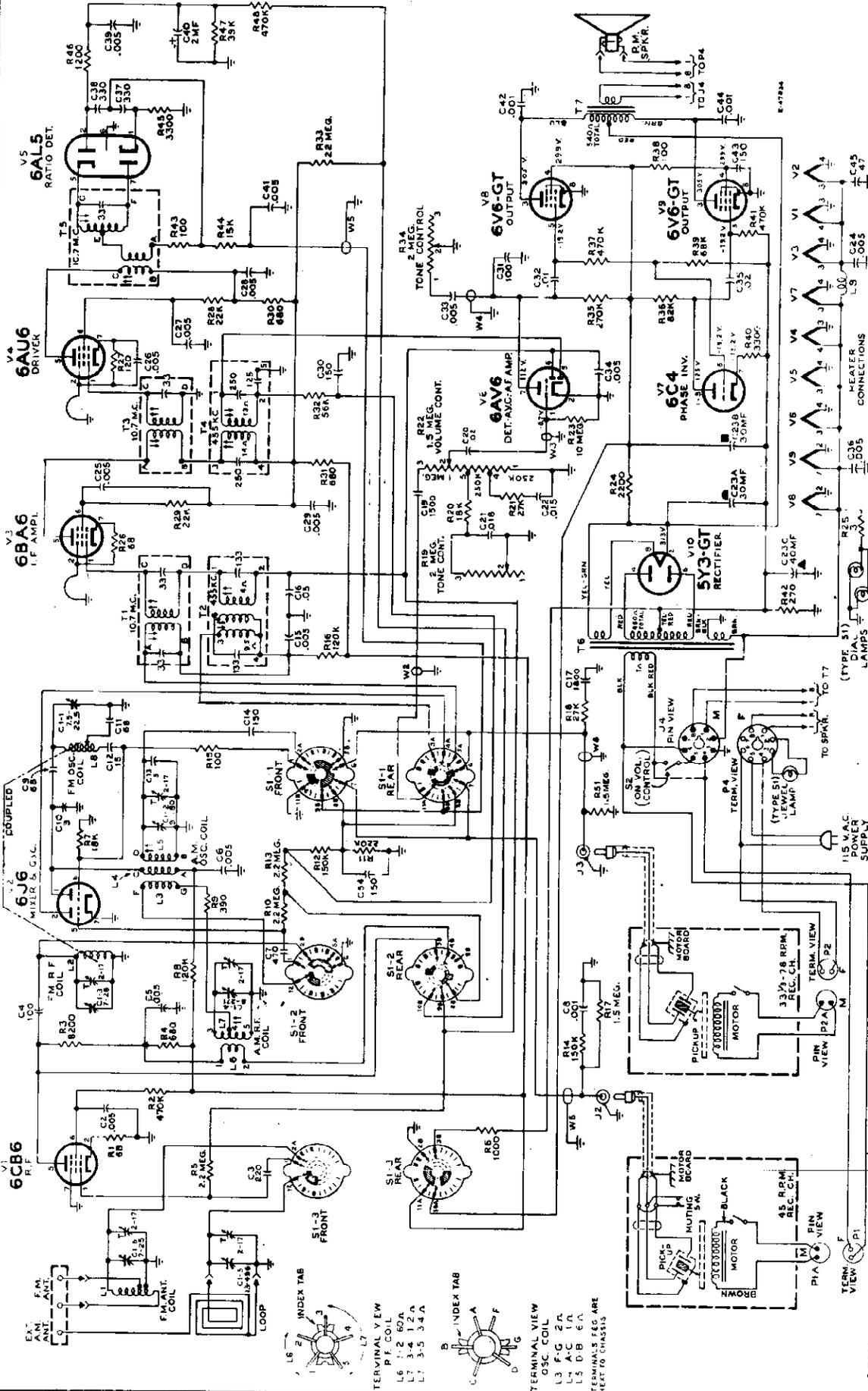
STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
CHASSIS ASSEMBLIES RC 1096			
75567	Capacitor -Variable tuning capacitor complete with drive drum (C1-1, C1-2, C1-3, C1-4, C1-5, C1-6)	75627	Clip -Clip for main cable—on rear of chassis
74733	Capacitor -Ceramic, 3 mmf. (C10)	75569	Coil -Oscillator coil (A-M) complete with adjustable core (L3, L4, L5)
75613	Capacitor -Ceramic, 5 mmf. (C13)	75570	Coil -R.F. coil complete with adjustable core (L6, L7)
39396	Capacitor -Ceramic, 100 mmf. (C4)	71942	Coil -Filament choke coil (L9)
75609	Capacitor -Ceramic, 47 mmf. (C45)	75615	Coil -Antenna coil- F-M (L1)
75612	Capacitor -Ceramic, 68 mmf. (C9, C11)	74815	Coil -R.F. coil- F-M (L2)
39396	Capacitor -Ceramic, 100 mmf. (C4)	74817	Coil -Oscillator coil F-M (L8)
75437	Capacitor -Ceramic, 100 mmf. (C31)	35787	Connector -Single contact female connector for phono cables (J2, J3)
75614	Capacitor -Ceramic, 150 mmf. (C14, C30, C43, C54)	75542	Connector--8 contact male connector for power input cable (J4)
75611	Capacitor -Ceramic, 220 mmf. (C3)	75543	Connector--2 contact female connector for 45 RPM motor cable (P1)
39640	Capacitor -Mica, 330 mmf. (C37, C38)	74879	Connector--2 contact female connector for antenna leads
39644	Capacitor -Mica, 470 mmf. (C7)	75537	Control -Volume control and power switch (R22, S2)
75610	Capacitor -Ceramic, 1500 mmf. (C19)	75561	Control -Tone control- L.F. (R19)
74850	Capacitor -Ceramic, 1800 mmf. (C17)	75562	Control -Tone control--H.F. (R34)
73473	Capacitor -Ceramic, 5000 mmf. (C2, C5, C6, C15, C24, C25, C27, C28, C29, C34, C36)	72953	Cord--Drive cord (approx. 66" overall length required)
73801	Capacitor -Tubular, paper, .001 mfd, 400 volts (C8)	75564	Coupling--Spring coupling for function switch extension shaft
70642	Capacitor -Tubular, paper, .001 mfd, 1000 volts (C42, C44)	75556	Cover -Insulating cover for electrolytic capacitor #72052
71926	Capacitor -Tubular, paper, .005 mfd, 200 volts (C26, C39, C41)	74839	Fastener -Push fastener for mounting R.F. shelf (4 req'd)
73920	Capacitor -Tubular, paper, .005 mfd, 400 volts (C33)	16058	Grommet--Rubber grommet for mounting R.F. shelf (4 req'd)
71925	Capacitor -Tubular, paper, .01 mfd, 400 volts (C32)	75547	Grommet -Rubber grommet to mount slide mechanism to bottom--rear (2 req'd)
72120	Capacitor -Tubular, paper, .015 mfd, 200 volts (C22)	75548	Grommet -Rubber grommet to mount slide mechanism to bottom--front (2 req'd)
58476	Capacitor -Tubular, paper, oil impregnated, .018 mfd, 400 volts (C21)	11765	Lamp -Dial lamp Mazda 51
74010	Capacitor -Tubular, paper, .02 mfd, 400 volts (C20, C35)	75544	Nut -Rivnut to fasten screw for mounting chassis (4 req'd)
73553	Capacitor -Tubular, paper, .05 mfd, 400 volts (C16)	18469	Plate -Bakelite mounting plate for electrolytic capacitor #72052
73747	Capacitor -Electrolytic 2 mfd, 50 volts (C40)	75535	Plate -Dial back plate complete with three (3) pulleys
72052	Capacitor -Electrolytic comprising 1 section of 30 mfd, 450 volts, 1 section of 30 mfd, 350 volts and 1 section of 10 mfd, 25 volts (C23A, C23B, C23C)	75536	Pointer -Station selector indicator
73935	Clip -Mounting clip for A-M, I-F transformers		

* Stock No. 72953 is a reel containing 250 feet of cord.

Replacement Parts—Concluded

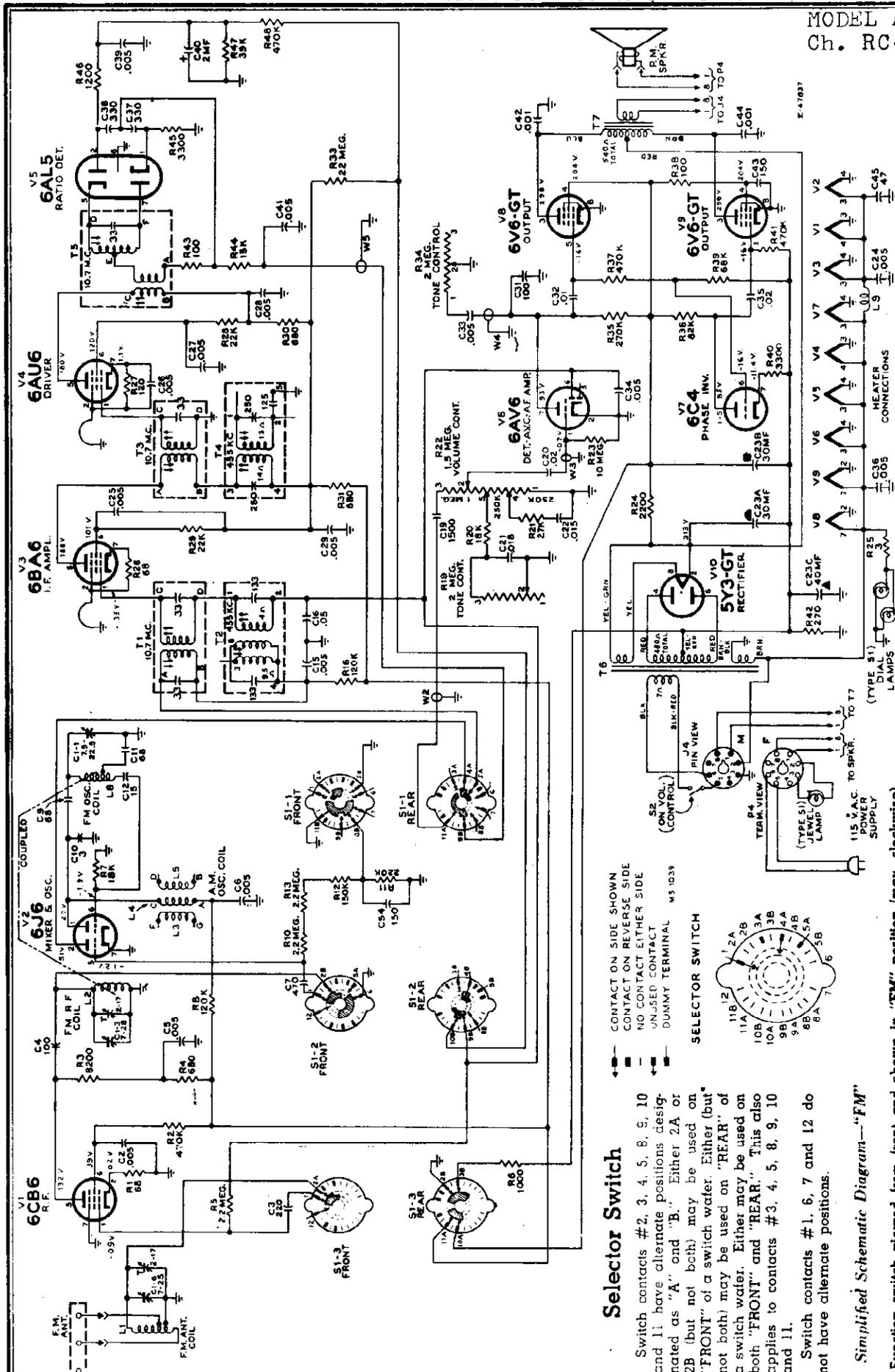
STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
72602	Pulley—Drive cord pulley		
72323	Resistor—Wire wound, 3 ohms, 1/2 watt (R25)		
73637	Resistor—Wire wound, 2200 ohms, 5 watts (R24)		
	Resistor—Fixed, composition—		
	68 ohms, ±10%, 1/2 watt (R1, R26)		
	100 ohms, ±10%, 1/2 watt (R15, R38, R43)		
	120 ohms, ±10%, 1/2 watt (R27)		
	270 ohms, ±5%, 2 watts (R42)		
	390 ohms, ±10%, 1/2 watt (R9)		
	680 ohms, ±10%, 1/2 watt (R4)		
	680 ohms, ±20%, 1/2 watt (R30, R31)		
	1000 ohms, ±10%, 1/2 watt (R6)		
	1200 ohms, ±5%, 1/2 watt (R46)		
	3300 ohms, ±5%, 1/2 watt (R40, R45)		
	8200 ohms, ±10%, 1 watt (R3)		
	15,000 ohms, ±10%, 1/2 watt (R44)		
	18,000 ohms, ±10%, 1/2 watt (R7, R20)		
	22,000 ohms, ±10%, 1/2 watt (R28, R29)		
	27,000 ohms, ±10%, 1/2 watt (R18, R21)		
	39,000 ohms, ±5%, 1/2 watt (R47)		
	56,000 ohms, ±10%, 1/2 watt (R32)		
	68,000 ohms, ±10%, 1/2 watt (R39)		
	82,000 ohms, ±10%, 1/2 watt (R36)		
	120,000 ohms, ±10%, 1/2 watt (R8, R16)		
	150,000 ohms, ±10%, 1/2 watt (R12, R14)		
	220,000 ohms, ±20%, 1/2 watt (R11)		
	270,000 ohms, ±10%, 1/2 watt (R35)		
	470,000 ohms, ±10%, 1/2 watt (R2, R37, R41, R48)		
	1.5 megohm, ±10%, 1/2 watt (R17, R51)		
	2.2 megohm, ±20%, 1/2 watt (R5, R10, R13)		
	10 megohm, ±20%, 1/2 watt (R23)		
	22 megohm, ±20%, 1/2 watt (R33)		
75540	Shaft—Tuning knob shaft		
75565	Shaft—Extension shaft for function switch		
73584	Shield—Tube shield for V1 and V6		
75546	Slide—Slide mechanism complete for radio chassis bottom		
31251	Socket—Tube socket, octal, wafer		
73117	Socket—Tube socket, 7 pin, miniature		
74179	Socket—Tube socket, 7 pin, miniature for 6CB6 and 6J6 tubes only.		
31364	Socket—Dial lamp socket		
75563	Spring—Retaining spring for function switch extension shaft		
74038	Spring—Drive cord spring		
74847	Support—Polystyrene support for F-M oscillator coil complete with mounting bracket		
75602	Switch—Function switch (S1-1, S1-2, S1-3)		
75557	Transformer—Output transformer (T7)		
73743	Transformer—Ratio detector transformer (T5)		
75558	Transformer—First I-F transformer (A-M) complete with adjustable cores (T2)		
73037	Transformer—Second I-F transformer (A-M) complete with adjustable cores (T4)		
75559	Transformer—First I-F transformer (F-M) complete with adjustable cores (T1)		
75560	Transformer—Second I-F transformer (F-M) complete with adjustable cores (T3)		
75566	Transformer—Power transformer, 117 volts, 60 cycle (T6)		
33726	Washer—"C" washer for tuning knob shaft		
	RADIO ROLLOUT CARRIAGE		
75603	Decal—Function decal for controls		
75572	Dial—Polystyrene dial scale		
75571	Frame—Moulded frame (maroon) for mounting radio chassis and 45 RPM record changer—for mahogany or walnut instruments		
75684	Frame—Moulded frame (light brown) for mounting radio chassis and 45 RPM record changer—for oak instruments		
75551	Handle—Metal pullout handle for mounting frame.		
75555	Screw—#8-32 x 3/8" cross recessed pan head machine screw to mount radio chassis (4 req'd)		
			SPEAKER ASSEMBLY
			Stamped 92569—12W RMA 274 RL 111-A1
		13867	Cap—Dust cap
		75682	Cone—Cone and voice coil assembly (3.2 ohms)
		75681	Speaker—12" P.M. speaker complete with cone and voice coil (3.2 ohms)
			NOTE:—If stamping on speaker does not agree with above number, order replacement parts by referring to model number of instrument, number stamped on speaker and full description of part required.
			MISCELLANEOUS
		71864	Antenna—F-M antenna
		75705	Antenna—Antenna loop complete less cable
		75898	Back—Back cover—maroon—for 33 1/2/78 RPM record changer compartment—for mahogany or walnut instruments (assembled to rollout)
		75901	Back—Back cover—light brown—for radio—45 RPM record changer compartment—for oak instruments (assembled to rollout)
		75900	Back—Back cover—maroon for radio—45 RPM record changer compartment—for mahogany or walnut instruments (assembled to rollout)
		73680	Board—"A-F-M" terminal board
		75694	Bracket—Stop bracket (less rubber bumper) for rollouts
		71599	Bracket—Pilot lamp bracket
		75696	Bumper—Rubber bumper for record changer rollout stop bracket
		75919	Button—Rosette button for speaker grille
		74296	Cable—Shielded pickup cable complete with pin plug for 33 1/2/78 RPM record changer
		72437	Cable—Shielded pickup cable complete with pin plug for 45 RPM record changer
		13103	Cap—Pilot lamp cap
		71892	Catch—Bullet catch and strike for cabinet door
		X3189	Cloth—Grille cloth for mahogany or walnut instruments
		X3093	Cloth—Grille cloth for oak instruments
		74882	Connector—2 contact (polarized) male connector for antenna loop cable
		74752	Connector—2 contact male connector for FM antenna terminal board cable
		75709	Connector—8 contact female connector for main cable (less shell) (P4)
		30868	Connector—2 contact female connector for 33 1/2/78 RPM record changer motor cable (P2)
		75474	Connector—Single contact male connector for speaker cable (2 req'd)
		71984	Decal—Trade mark decal (RCA Victor)
		74273	Decal—Trade mark decal (Victrola)
		74838	Grommet—Power cord strain relief (1 set)
		37396	Grommet—Rubber grommet for mounting speaker
		75697	Grommet—Rubber grommet for mounting 45 RPM changer
		75551	Handle—Metal pullout handle for 33 1/2/78 RPM record changer mounting frame
		74308	Hinge—Cabinet door hinge (1 set)
		75712	Knob—Tuning control, tone control or volume control and power switch knob—maroon—for mahogany or walnut instruments
		75713	Knob—Tuning control, tone control or volume control and power switch knob—tan—for oak instruments
		75714	Knob—Function switch knob—maroon for mahogany or walnut instruments
		75715	Knob—Function switch knob—tan—for oak instruments
		11765	Lamp—Pilot lamp—Mazda #51
		75917	Nail—Rosette headnail for grille (3 required)
		73634	Nut—Speed nut for speaker mounting screw
		75916	Pull—Door pull
		74279	Screw—#8-32 x 3/8" trinit head screw for door pull
		75708	Shell—Shell for 8 contact female connector #75709
		75546	Slide—Slide mechanism for 33 1/2/78 RPM record changer mounting frame
		31364	Socket—Pilot lamp socket and lead
		74734	Spring—Retaining spring for knobs
		75902	Spring—Suspension spring for main cable
		72938	Stop—Cabinet door stop

MODEL A-101



RESISTANCE VALUES IN OHMS. K = 1000.
 Function switch viewed from front and shown in "Phono 79/33" position (max. clockwise).
 CAPACITOR VALUES LESS THAN 1 ARE IN MF., VALUES GREATER THAN 1 ARE IN MMF. UNLESS OTHERWISE SPECIFIED.
 VOLTAGES MEASURED TO CHASSIS WITH VOLTOHYMIST WITH NO SIGNAL INPUT AND SHOULD HOLD WITHIN ±20% WITH 117-VOLT POWER SUPPLY.

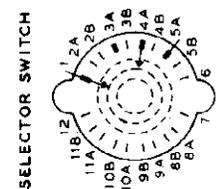
Complete Schematic Diagram



Selector Switch

Switch contacts #2, 3, 4, 5, 8, 9, 10 and 11 have alternate positions designated as "A" and "B." Either 2A or 2B (but not both) may be used on "FRONT" of a switch wiper. Either (but not both) may be used on "REAR" of a switch wiper. Either may be used on both "FRONT" and "REAR." This also applies to contacts #3, 4, 5, 8, 9, 10 and 11.

Switch contacts #1, 6, 7 and 12 do not have alternate positions.



Simplified Schematic Diagram—"FM"

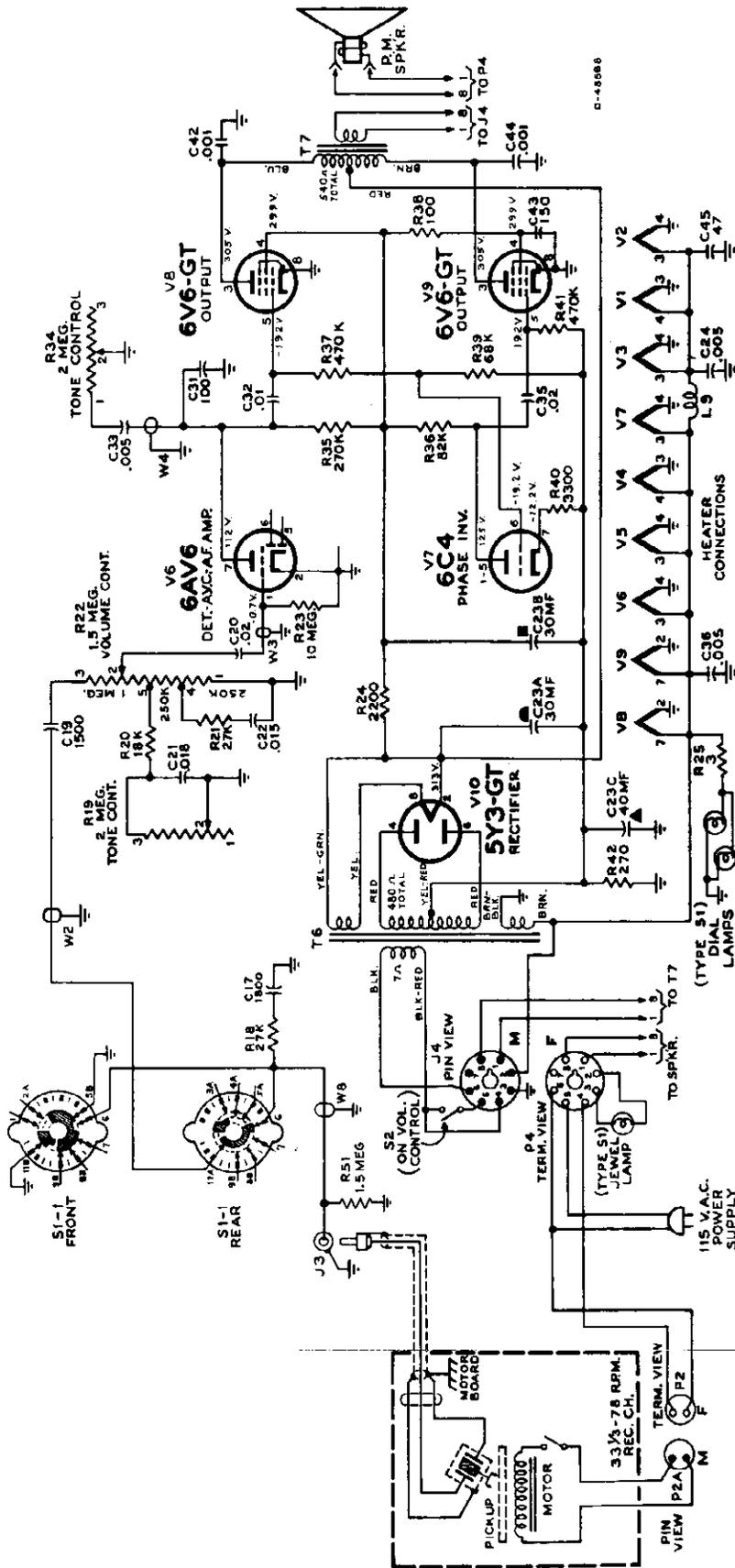
Function switch viewed from front and shown in "FM" position (max. clockwise).

CAPACITOR VALUES LESS THAN 1 ARE IN MF., VALUES GREATER THAN 1 ARE IN MMF. UNLESS OTHERWISE SPECIFIED.

RESISTANCE VALUES IN OHMS. K = 1000.

VOLTAGES MENTIONED TO BE CHECKED WITH NO SIGNAL INPUT AND SWITCHED WITHIN ±20% WITH 117-VOLT POWER SUPPLY.

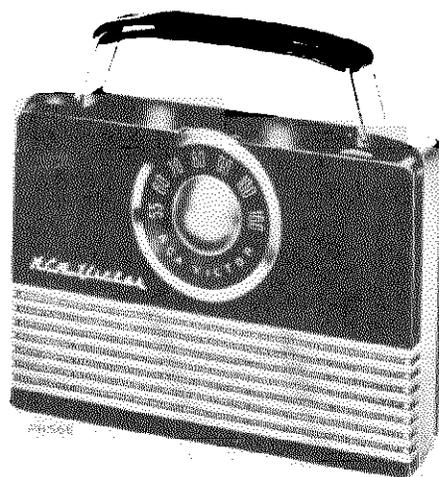
MODEL A-101,
Ch. RC-1096



Note:
When the function switch is in "Phono 45" or "Phono 78/33" position the B+ supply voltage to tubes V1, V2, V3 and V4 is disconnected at switch section S1:3 rear. This results in higher plate and screen voltages on V6, V7, V8 and V9.
The bias resistor R6 (in parallel with R42 in AM and FM positions) is also disconnected at S1:3 rear. This results in higher grid bias voltage on V8 and V9.

FUNCTION SWITCH VIEWED FROM FRONT AND SHOWN IN "PHONO 78/33" POSITION (MAX. C/CLOCKWISE).
CAPACITOR VALUES LESS THAN 1 ARE IN MF., VALUES GREATER THAN 1 ARE IN MMF. UNLESS OTHERWISE SPECIFIED.
RESISTANCE VALUES IN OHMS. K = 1000.
VOLTAGES MEASURED TO CHASSIS WITH VOLTOHYMST WITH NO SIGNAL INPUT AND SHOULD HOLD WITHIN ±20% WITH 117-VOLT POWER SUPPLY.
RECORD CHANGER: Model 960282-4,
See Pgs. RCD.CH.21-18 to RCD.Ch. 21-33.

MODELS B-411, Ch.
RC-1098, RC-1098A



Specifications

Tuning Range 540-1600 kc
Intermediate Frequency 455 kc

Tube complement:
1. RCA 1R5..... Converter
2. RCA 1U4..... I.F. Amplifier
3. RCA 1U5..... 2nd Det.-A.F. Amp.-A.V.C.
4. RCA 3V4..... Output

Loudspeaker
Size and type..... 2" x 3" P.M.
Voice coil impedance..... 11 3/4 ohms at 1000 cycles

Batteries Required:
Type of Battery Current Approx. Life
 Consumption (Intermittent Service)

"A"—1.5 volt
RCA VS 036 or VS 001 } 0.25 amp. 7 to 10 hrs.

"B"—67.5 volts
RCA VS 016 } 8.45 ma. 40 to 60 hrs.

Power Output:
Undistorted..... 0.075 watt
Maximum..... 0.10 watt

Dimensions (over-all)..... 5 1/4" x 7 1/2" x 2 1/4"
Weight (with batteries)..... slightly under 3 lbs.

Production Changes:

There are three types of case assemblies in use (two types are stocked) using two types of case backs (one type is stocked). SEE PAGE 4 FOR EXPLANATION OF CASE ASSEMBLY DIFFERENCES.

Two chassis have been used; RC-1098 has all individual resistors and capacitors, RC-1098A has two "Printed Circuit" units which replace ten individual resistors and capacitors.

Replacement Parts

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
	CHASSIS ASSEMBLIES RC 1098, RC 1098A		18,000 ohms, ±10%, 1/2 watt (R2) 47,000 ohms, ±20%, 1/2 watt (R5) 100,000 ohms, ±20%, 1/2 watt (R1) 1 megohm, ±20%, 1/2 watt (R9) 3.3 megohm, ±20%, 1/2 watt (R4, R10) 4.7 megohm, ±20%, 1/2 watt (R3, R7) 10 megohm, ±20%, 1/2 watt (R8)
75778	Antenna—Ferrite rod antenna (L1)	70827	Screw—#6-32 x 3/16" socket head set screw for volume control knob
75783	Capacitor—Variable tuning capacitor (C1-1, C1-2)	78780	Socket—Tube socket, 7 pin, miniature
73153	Capacitor—Ceramic, 4 mmf. (C5)	78775	Transformer—First I-F transformer (T1)
75784	Capacitor—Ceramic, 56 mmf. (C2, C7)	78776	Transformer—Second I-F transformer (T2)
78785	Capacitor—Ceramic, 82 mmf. (C9, C10)	78777	Transformer—Output transformer (T3)
73960	Capacitor—Ceramic, 10,000 mmf. (C4)		SPEAKER ASSEMBLY 92823-4
73964	Capacitor—Electrolytic, 10 mfd., 70 volts (C15)	76373	Speaker—2" x 3" P.M. speaker complete with cone and voice coil
72792	Capacitor—Tubular, paper, .001 mfd., 200 volts (C12)		MISCELLANEOUS
72315	Capacitor—Tubular, paper, .002 mfd., 200 volts (C11, C14)	78787	Back—Case back
73961	Capacitor—Tubular, paper, .003 mfd., 200 volts (C6)	78647	Case—Case assembly (front and back) complete with metal side trim, metal grille and emblem—less handle and links (early type—does not have "ON" indication opening)
71928	Capacitor—Tubular, paper, .02 mfd., 200 volts (C13)	76320	Case—Case assembly (front and back) complete with metal side trim, metal grille and emblem less handle and links (late type has "ON" indication opening)
73583	Capacitor—Tubular, paper, .08 mfd., 400 volts (C8)	75851	Emblem—"RCA Victor" emblem
75781	Clip—"A" Battery mounting clip (negative)	75848	Grille—Metal grille
75010	Clip—Output transformer mounting screw clip	75849	Handle—Carrying handle
75774	Coil—Oscillator coil complete with adjustable core (L2, L3)	75788	Knob—Dial knob less spring clip
75782	Contact—"A" Battery contact (positive)	75850	Link—Carrying handle link
75773	Control—Volume control and power switch (R8, S1)	75801	Screen—Crinoline screen (black) for case front
37396	Grommet—Rubber grommet for antenna rod	74734	Spring—Spring clip for dial knob
75779	Knob—Volume control knob—less set screw (early type—does not have "ON" indication)		
76321	Knob—Volume control knob—less set screw (late type—has "ON" indication)		
75788	Lead—"B" battery lead complete with connector		
76372	Plate—Four element "Printed Circuit" plate stamped 942660-1 (diode filter unit C7, C9, R4, R5)		
76371	Plate—Six element "Printed Circuit" plate stamped 942659-1 (audio coupling unit C10, C12, R2, R7, R9, R10)		
	Resistor—Fixed, composition:— 390 ohms, ±10%, 1/2 watt (R11) 1000 ohms, ±20%, 1/2 watt (R12)		

PAGE 22-12 RADIO CORPORATION OF AMERICA

MODELS B-411, Ch.
RC-1098, RC-1098A

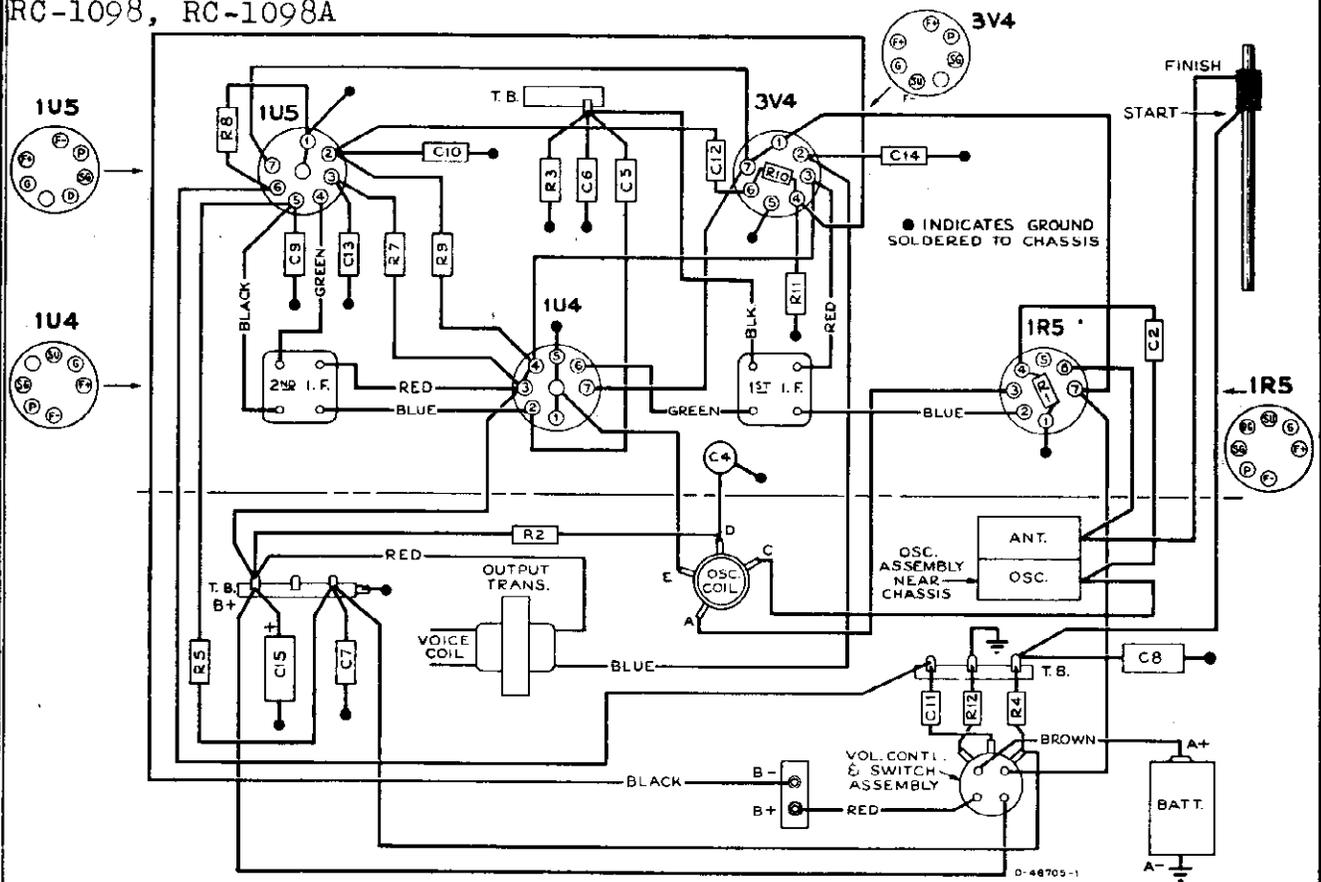
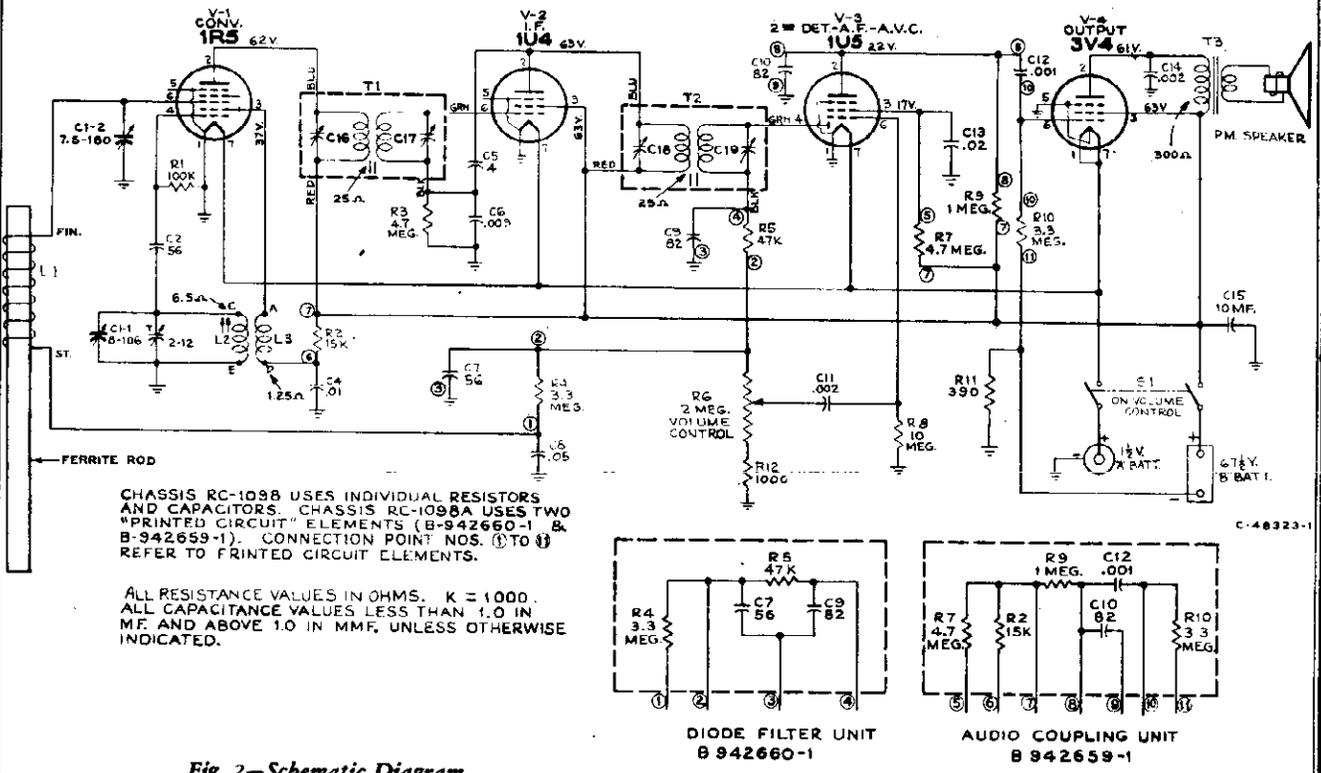


Fig. 1—Connection Diagram

In late production chassis:

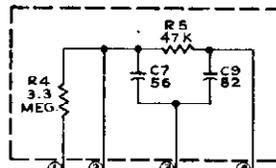
"Printed Circuit" unit stamped 942659-1 replaces individual parts C10, C12, R2, R7, R9 and R10.

"Printed Circuit" unit stamped 942660-1 replaces individual parts C7, C9, R4 and R5.

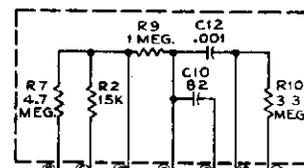


CHASSIS RC-1098 USES INDIVIDUAL RESISTORS AND CAPACITORS. CHASSIS RC-1098A USES TWO "PRINTED CIRCUIT" ELEMENTS (B-942660-1 & B-942659-1). CONNECTION POINT NOS. (1) TO (11) REFER TO PRINTED CIRCUIT ELEMENTS.

ALL RESISTANCE VALUES IN OHMS. K = 1000. ALL CAPACITANCE VALUES LESS THAN 1.0 IN MF. AND ABOVE 1.0 IN MMF. UNLESS OTHERWISE INDICATED.



DIODE FILTER UNIT
B 942660-1



AUDIO COUPLING UNIT
B 942659-1

Fig. 2—Schematic Diagram

Alignment Procedure

Output Meter.—Connect meter from No. 2 terminal of V4 (plate of 3V4) to ground. Turn volume control to maximum position.

Test-Oscillator.—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the oscillator output as low as possible to avoid a-v-c action.

Note:—The inductance of the antenna coil is adjusted by sliding the coil along the Ferrite rod. This ant. coil is supplied pre-adjusted and cemented to rod. This makes further adjustment unnecessary. However when replacing ant. assembly make certain that the coil end of the rod extends two inches beyond the tube shelf.

CRITICAL LEAD DRESS

1. Dress all I-F transformer leads down to base and push any excess lead back in can.
2. Black lead from 1st I-F should lay down against top of tube shelf with capacitor C6 over it.
3. Dress neutralizing capacitor C5 direct and above chassis base, avoid lead length.
4. Dress blue lead from volume control and green lead from terminal board near volume control down to base and under gang frame diagonally to termination.
5. Dress blue lead from output transformer under clamp on back of gang condenser and direct to terminal 2 of V4.
6. Adjust Ferrite antenna so that coil end of rod extends two inches beyond tube shelf.
7. Dress all bare wires, pigtail leads and non-insulated components to prevent shorts.

Steps	Connect the high side of test osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1				C18, C19 2nd I-F trans.
2	Connection lug of C1-2 located on rear of gang in series with .01 mf.	485 kc	Quiet point near 1600 kc	C18, C17 1st I-F trans.
Repeat steps 1 and 2				
4		1400 kc	14 Rock gang	C1-1T (osc.)
5	*Antenna coupling loop (Chassis in case)	800 kc	60 Rock gang	L2 (osc.)
6		Repeat steps 4 and 5		

*Steps 4 and 5 require a coupling loop from the signal generator to feed a signal into the receiver ant. coil. This loop should be loosely coupled to the receiver antenna coil so as not to disturb the receiver ant. coil inductance.

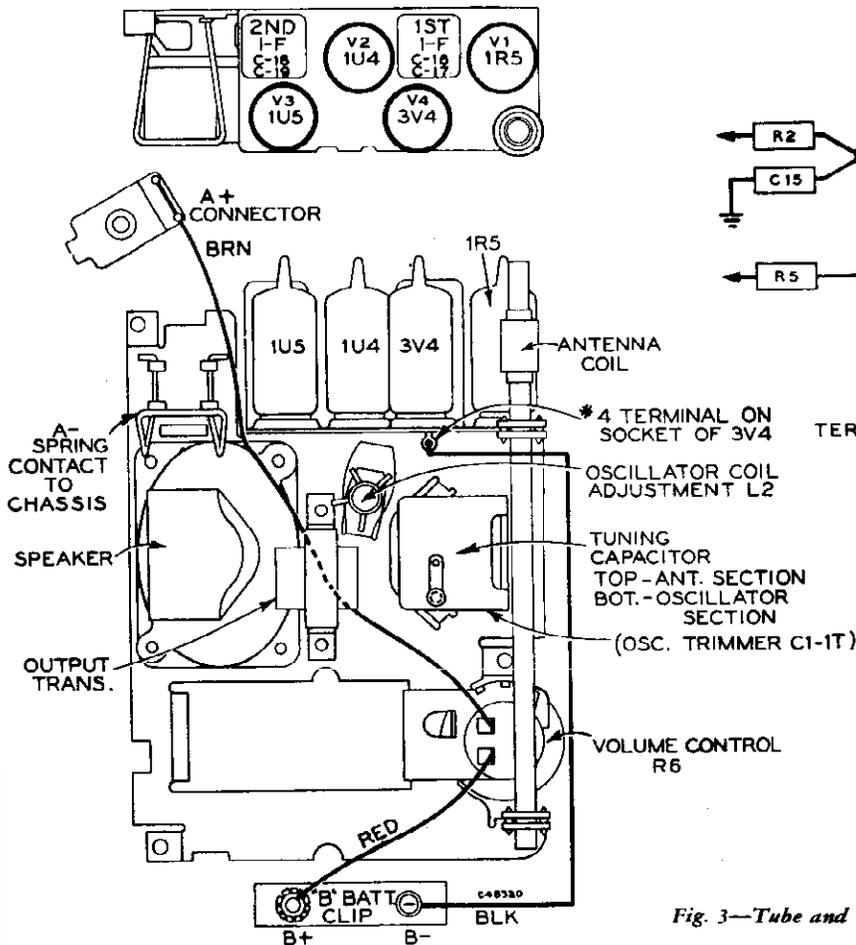


Fig. 3—Tube and Trimmer Locations

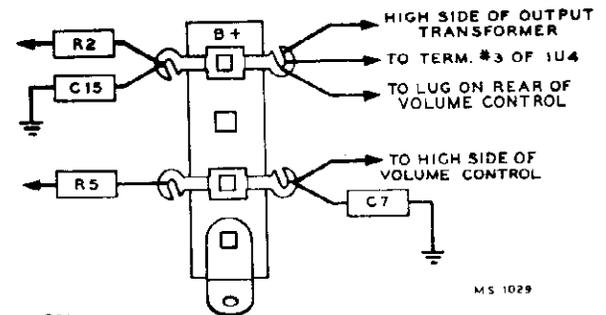


Fig. 4—Terminal Strip

MS 1029

MODELS B-411, Ch.
RC-1098, RC-1098A

CHANGES IN CASE ASSEMBLIES:

1. The original back (not stocked) had slots in the bottom edge which engaged with extension tabs of the metal trim of the case front.
2. Late production backs (Stock No. 75787) have molded lips on the bottom edge which fit into slots of the case front. When installing this back on early type case fronts, it will be necessary to break off the locking tabs on each side of the original trim strip.
3. The latest production of case assemblies (Stock No. 76320) have an "ON" indication opening in front of the volume control knob. Volume control knob (Stock No. 76321) is used with this case assembly.

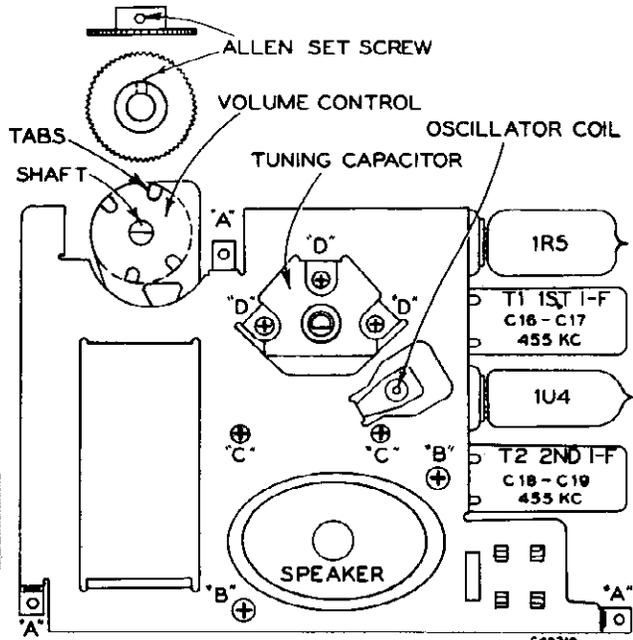
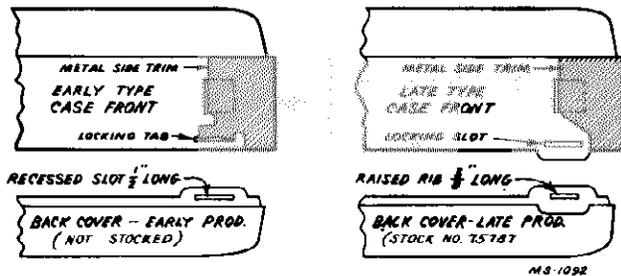


Fig. 5—Chassis assembly

REPLACEMENT OF COMPONENT PARTS

- I. To Remove Back Cover
 - a. Depress top of case midway between the handle supports, until the top end of the back separates from the main case.
 - b. Pull the back cover back and up, thereby unhooking the retaining lugs in the bottom of the main case.
- II. To Replace Batteries
 - a. Remove back cover.
 - b. Remove either or both "A" and "B" batteries as may be necessary. The "B" battery snap fasteners can best be removed by inserting a screwdriver under the snap fastener strip and prying upward.
 - c. The "A" battery can easily be removed by pulling back on the spring wire and lifting out.
- III. To Remove Main Case
 - a. Remove front dial. (Just Pull).
 - b. Remove back cover.
 - c. Remove the three screws "A".
 - d. Remove "A+" clip (Squeeze and lift out of slot in case).
 - e. Grasp the assembly by the speaker housing and pull the bottom end of the chassis outward then down so the Volume Control knob clears the case.
- IV. To Replace Front Metal Grille
 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis.
 - d. Bend small tabs inside case and separate metal strips from cabinet.
 - e. Bend small tabs inside case and separate grille from cabinet. Insert new grille and bend tabs.
Note:—A black non-metallic screen is placed between the grille and the cabinet.
- V. To Remove Handle
 - a. Remove handle by separating the square spring wire clips on each end of handle and lift out.
- VI. To Remove Tubes

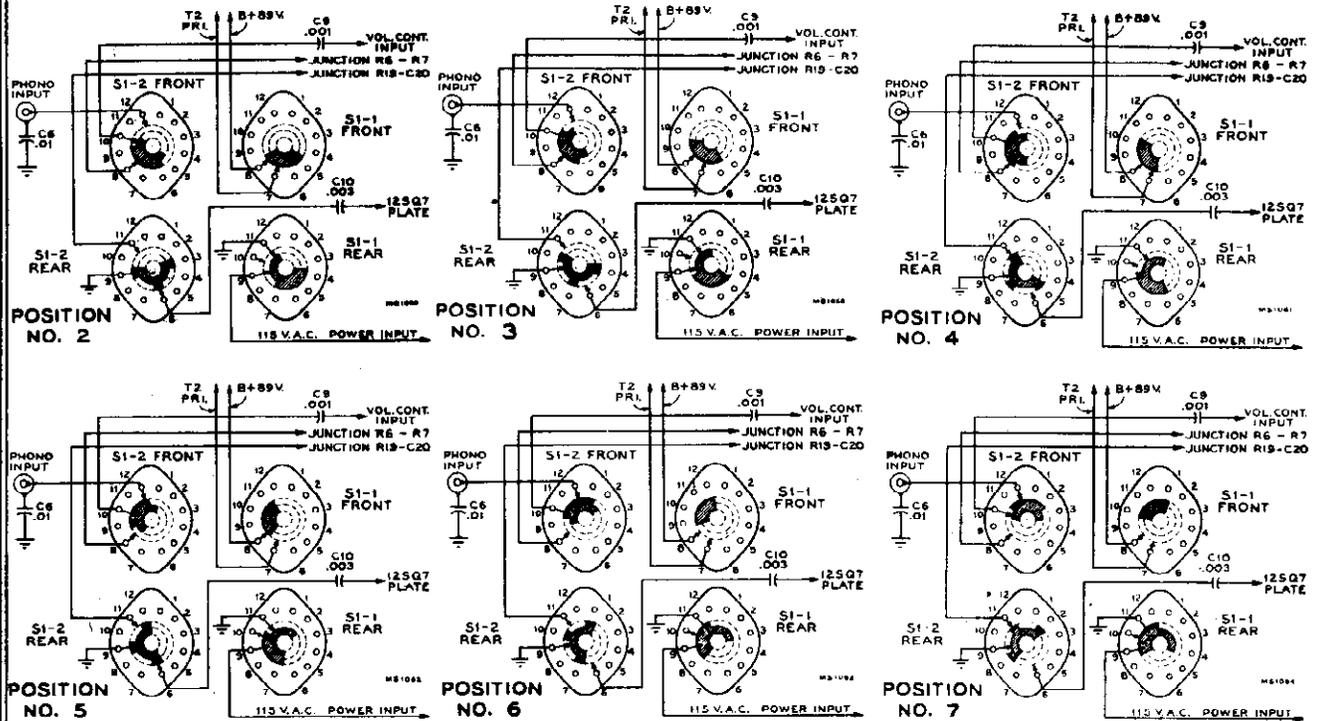
There is very little room in the cabinet so it is suggested the chassis be removed from the cabinet to replace tubes.

 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis
 - d. Remove tubes.
- VII. To Remove Speaker
 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis from cabinet.
 - d. Unsolder voice coil leads.
 - e. Remove two screws "B" and lift speaker out.
- VIII. To Remove Output Transformer
 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis from cabinet.
 - d. Unsolder leads.
 - e. Remove two screws "C" and lift transformer out.
- IX. To Remove Volume Control
 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis from cabinet.
 - d. Unsolder leads.
 - e. Loosen Allen Set screw on Volume Control knob and remove knob. (Just Pull).
 - f. Bend tabs holding Volume Control to chassis and lift the Volume Control out.
- X. To Remove Tuning Capacitor
 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis from cabinet.
 - d. Unsolder leads to tuning capacitor.
 - e. Remove three screws "D" holding capacitor and lift out.
- XI. To Remove Oscillator Coil
 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis
 - d. Unsolder leads to coil.
 - e. Remove coil by unsnapping mounting clips from angle bracket.
- XII. To Remove First I-F Transformer
 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis.
 - d. Remove the mounting screws of both speaker and output transformer and move the speaker and transformer as found necessary for access to 1st I-F transformer leads.
 - e. Unsolder four leads from transformer.
 1. Blue lead from #2 terminal (Plate of 1R5 tube).
 2. Red lead from #3 terminal (Screen grid of 3V4 tube).
 3. Green lead from #6 terminal (Control grid of 1U4 tube).
 4. Black lead from lug on small terminal board on top of tube shelf.
 - f. Bend one mounting lug and unsolder the other lug from the chassis and lift the transformer out.
- XIII. To Remove 2nd I-F Transformer
 - a. Remove front dial.
 - b. Remove back cover.
 - c. Remove chassis.
 - d. Remove the mounting bolts of both speaker and output transformer and move the speaker and transformer as found necessary for access to 2nd I-F transformer leads.
 1. Blue lead from #2 terminal (Plate of 1U4 tube).
 2. Red lead from #3 terminal (Screen grid of 1U4 tube).
 3. Green lead from #4 terminal (Diode of 1U5 tube).
 4. Black lead from #5 terminal (Dummy terminal of 1U5 tube).
 - e. Unsolder the tabs from the chassis and lift the transformer out.

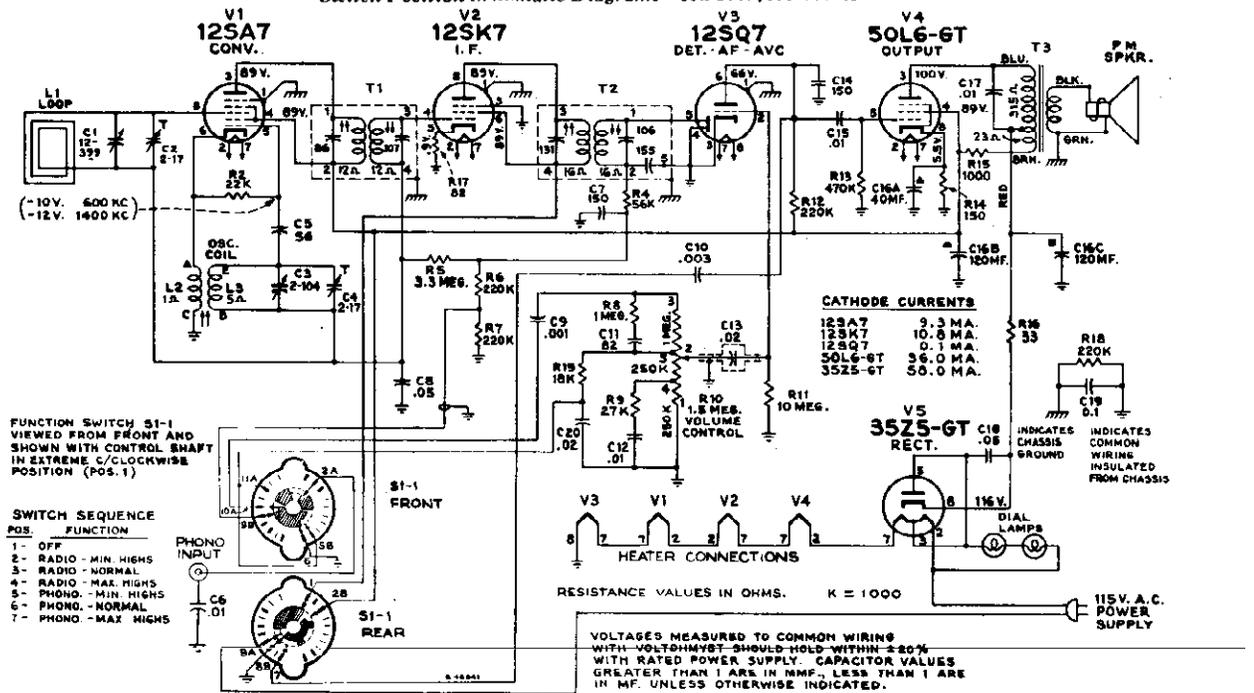
NOTE: For Add. data, See 9X571, on Pgs. 20-17 to 20-18.

Stock No.	DESCRIPTION
75836	Switch—Function switch for RC-1079E, RC-1079F S1 SPEAKER ASSEMBLIES STAMPED 92586-4W
74759	Cone—Cone and voice coil assembly
74664	Speaker—8" P.M. speaker complete with cone and voice coil

MODELS 9X571, Ch. RC-1079E; 9X572, Ch. RC-1079A, RC-1079F



Switch Position Schematic Diagrams—RC-1079, RC-1079A



Schematic Diagram—RC-1079E, RC-1079F

SPEAKER GRILLE DIFFUSER RINGS

In early production the speaker diffuser rings were fastened in place to the metal speaker grille with speed nuts slipped over plastic tabs protruding through the metal grille base.

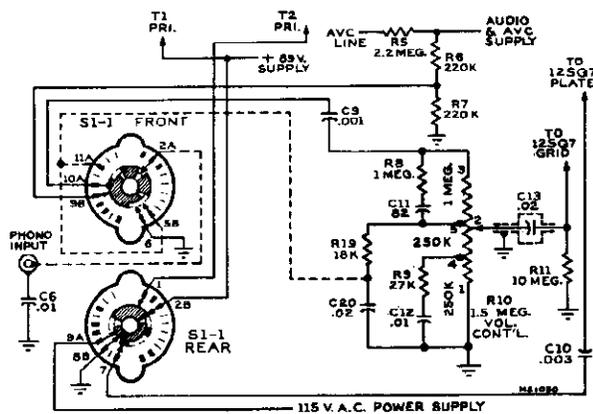
In late production these protruding plastic tabs are deformed by heat application, securely fastening the diffuser rings to the metal grille base.

If replacement of any of the diffuser rings is required, it is only necessary to tightly press the rings against the cabinet, and deform the plastic tabs from the inside with a hot soldering iron.

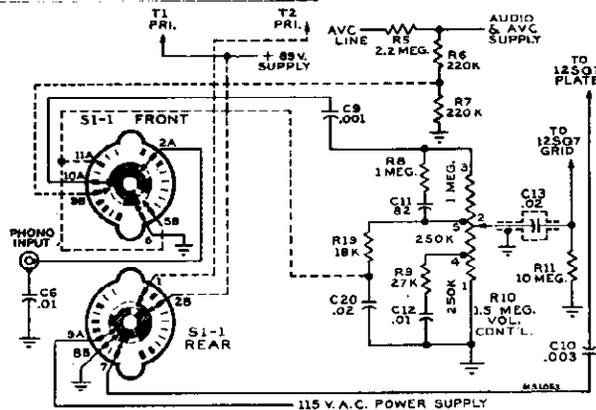
Any ring may be removed or installed without removing any of the other rings. This may be done by pressing on opposite outer edges to form an ellipse large enough to slip over the next smaller ring. Before any ring can be removed, it is necessary to unfasten the plastic tabs which project into the cabinet.

CHASSIS RC-1079A,
RC-1079E, RC-1079F

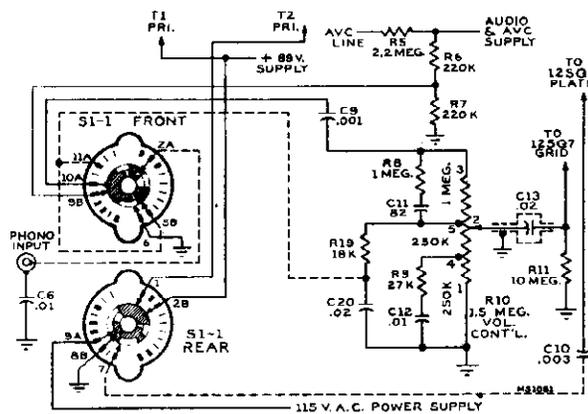
Loudspeaker (92586-2W or 92586-4W)
Size and Type..... 8 in. PM
Voice Coil Impedance..... 3.2 ohms at 400 cycles



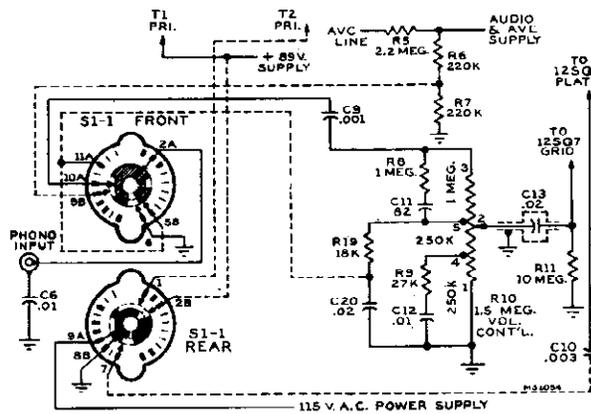
POSITION No. 2—RADIO MIN. HIGHS



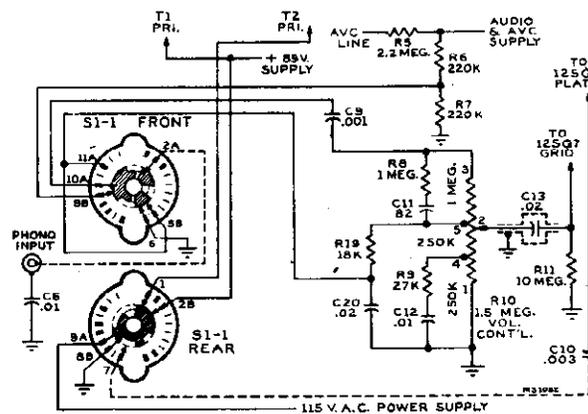
POSITION No. 5—PHONO MIN. HIGHS



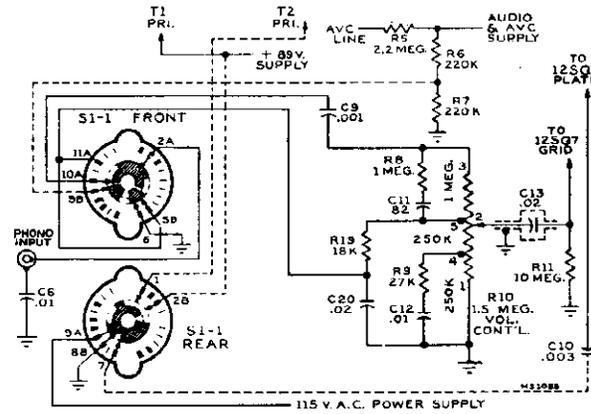
POSITION No. 3—RADIO NORMAL



POSITION No. 6—PHONO NORMAL



POSITION No. 4—RADIO MAX. HIGHS



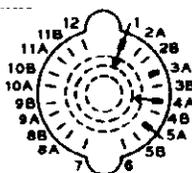
POSITION No. 7—PHONO MAX. HIGHS

Selector Switch

Switch contacts #2, 3, 4, 5, 8, 9, 10 and 11 have alternate positions designated as "A" and "B." Either 2A or 2B (but not both) may be used on "FRONT" of a switch wafer. Either (but not both) may be used on "REAR" of a switch wafer. Either may be used on both "FRONT" and "REAR." This also applies to contacts #3, 4, 5, 8, 9, 10 and 11.

Switch contacts #1, 6, 7 and 12 do not have alternate positions.

SELECTOR SWITCH



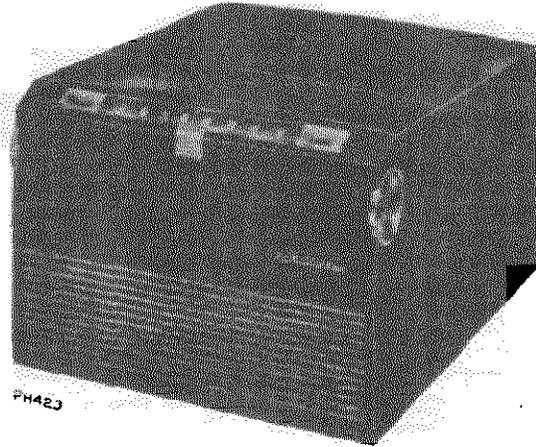
Switch Position Schematic Diagrams
Chassis RC-1079E, RC-1079F

- ◀ CONTACT ON SIDE SHOWN
- ▬ CONTACT ON REVERSE SIDE
- NO CONTACT EITHER SIDE
- ◻ UNUSED CONTACT
- DUMMY TERMINAL

HUM REDUCTION

Due to the excellent bass reproduction of these instruments the critical lead dress should be closely observed to obtain minimum hum. The outside foil polarity of capacitors in the audio circuit should not be reversed.

MODEL 9Y511,
Ch. RC-1077B

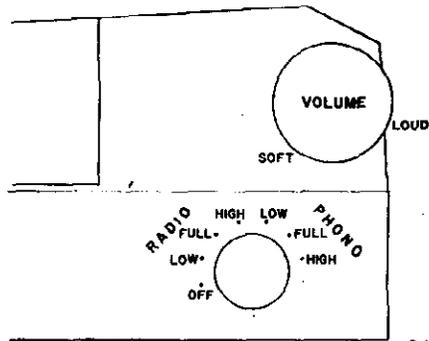


Specifications

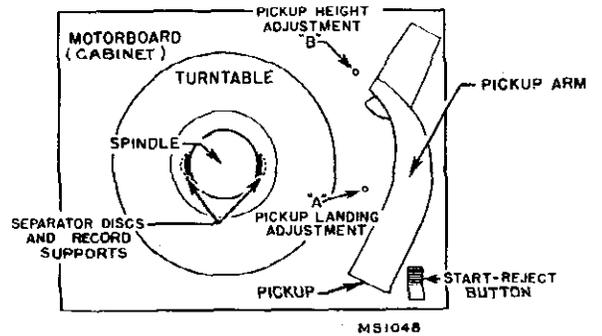
Tuning Range 540-1600 kc
Intermediate Frequency 455 kc
Tube Complement
 1. RCA-12BE6 Converter
 2. RCA-12BA6 I-F Amplifier
 3. RCA-12AV6 Det., AVC., A-F Amplifier
 4. RCA-50L6GT Output
 5. RCA-35W4 Rectifier
Power Supply Rating 115 volts, 60 cycles a.c., 60 watts
Dial Lamps (2) Mazda type 1490, 3.2 volts, 0.16 amp.
Loudspeaker (92585-1)
 Size and type 5" x 7" P.M.
 Voice coil impedance 3.2 ohms at 400 cycles

Power Output
 Undistorted 1 watt
 Maximum 1.5 watts
Cabinet Dimensions
 Height 7 $\frac{3}{4}$ " Width 12 $\frac{3}{4}$ " Depth 14 $\frac{1}{4}$ "
Tuning Drive Ratio 7 $\frac{1}{2}$:1 (3 $\frac{3}{4}$ turns of knob)
Record Changer (RP 168K-4)
 Turntable speed 45 r.p.m.
 Records used RCA—7 in. fine groove
 Record capacity Up to 10 records
 Pickup (Stock No. 74068) Crystal (medium output)

**FOR RECORD CHANGER SERVICE INFORMATION
 —REFER TO RP 168 SERIES SERVICE DATA**



Controls—End View



Record Changer—Top View

Care of Stylus

The record changer stylus is protected by a permanent metal guard. LINT MAY COLLECT TO CLOG THE OPENING IN THE GUARD AT THE STYLUS POINT AND CAUSE POOR RECORD REPRODUCTION. This may require occasional cleaning of the guard opening—clean by carefully brushing with a small soft brush.

Service Hints

The tubes and the dial lamps are accessible by removing the panel in the front of the record changer compartment. The chassis metal mounting plate should be flush against the front of the cabinet. The position of the speaker is adjustable. When correctly positioned, it should set firmly against the front of the cabinet but with no undue strain on the speaker.

RECORD CHANGER: See Model RP-168 Series. Pts. RGD.Ch.19-1 to 19-8.

MODEL 9Y511,
Ch. RC-1077B

Alignment Procedure

Output Meter—Connect meter across speaker voice coil. Turn volume control to maximum.

Test Oscillator—Connect low side of test oscillator to common wiring in series with a .1 mfd. capacitor. If the test oscillator is a.c. operated it may be necessary to use an isolation transformer for the receiver during alignment and the low side of the test oscillator connected directly to common wiring at the electrolytic capacitor. Keep the oscillator output low to prevent a-v-c action.

Dial Pointer Adjustment Rotate tuning condenser until the plates are fully open. Adjust indicator pointer to 1630 kc (extreme high frequency end of the scale).

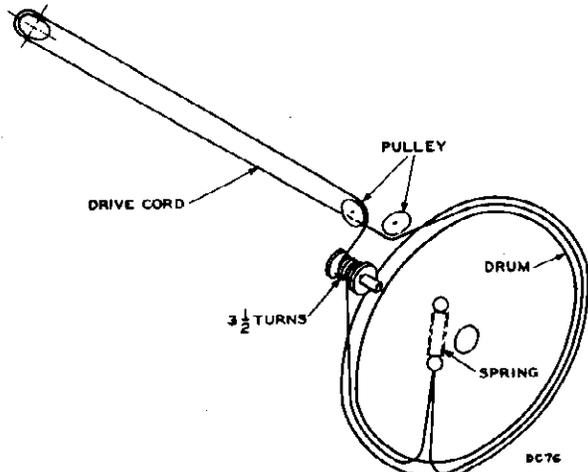
Steps	Connect the high side of test to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. output
1	I.F. grid, in series with .1 mfd.	485 kc	Quiet point 1,600 kc end of dial	Pri. & Sec. 2nd I.F. transformer
2	Converter grid in series with .1 mfd.			Pri. & Sec. 1st I.F. transformer

NOTE — ANTENNA LOOP AND RECORD CHANGER MUST BE IN CABINET FOR THE FOLLOWING

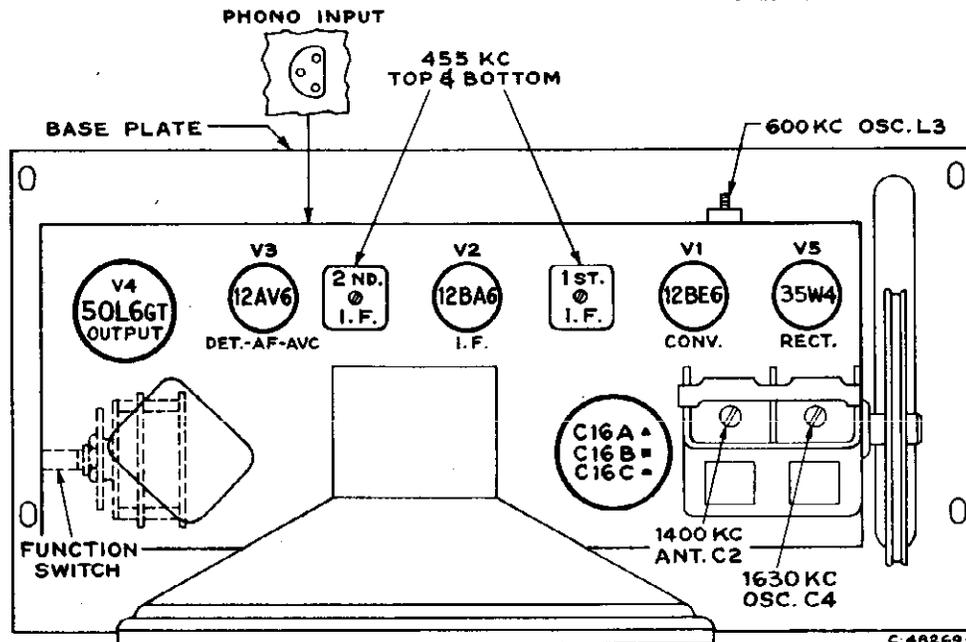
3	Short wire placed near loop for radiated signal.	1,630 kc	Extreme R. H. end (gang open)	1,630 KC trimmer (osc.)	
4		1,400 kc	1,400 kc	1,400 KC trimmer (ant.)	
5		600 kc	600 kc	Osc. Coil L3 Rock gang	
6	Repeat steps 3, 4, & 5 if necessary				

LEAD DRESS

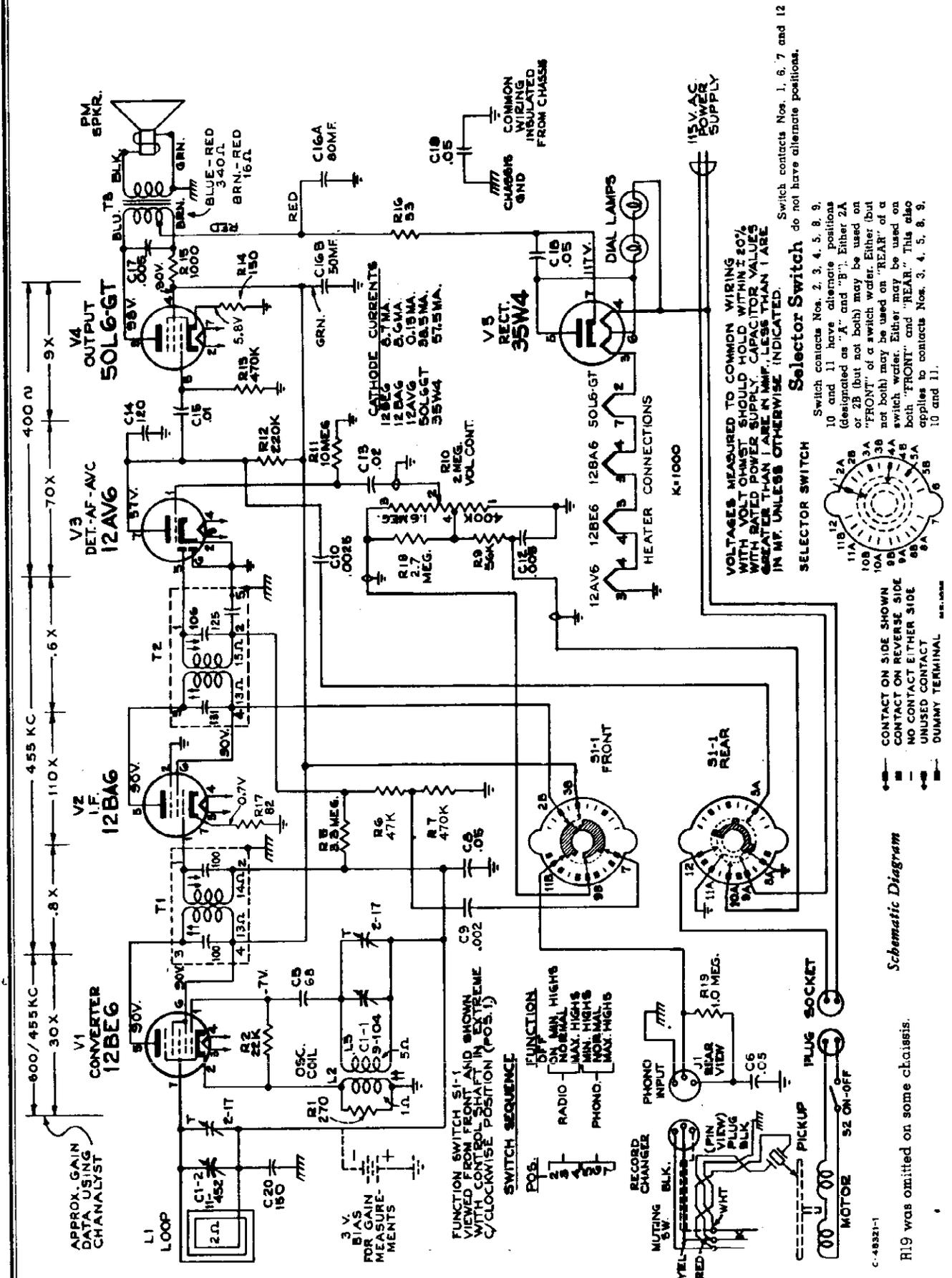
1. Dress all heater leads and pilot light leads down to chassis and as far as possible from all audio grid and plate wiring.
2. Dress all exposed leads away from each other and away from chassis to prevent short circuits.
3. Dress lead from R.F. section of gang to V1 pin 7 direct but away from chassis base to reduce capacity, also away from fuse resistor.
4. Dress lead from oscillator section of gang to oscillator coil direct but away from chassis base to reduce capacity.
5. Connect capacitor C20 with short leads between gang frame and mounting bracket.
6. Dress output transformer leads down to base.
7. Dress loop antenna leads away from gang plates and tubes.
8. Dress 33 ohm limiting resistor away from chassis.



Dial Drive Mechanism



Tube and Trimmer Locations



Schematic Diagram

R19 was omitted on some chassis.

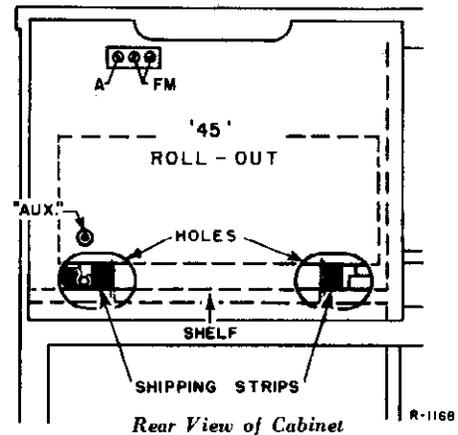
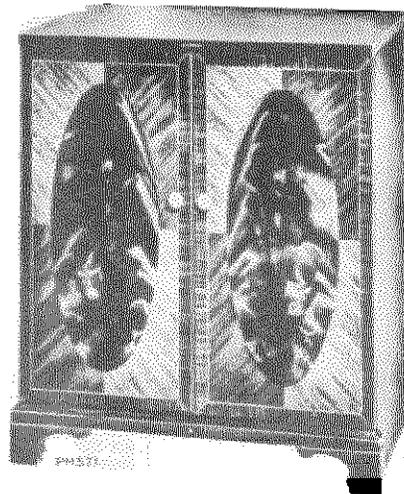
MODEL 9Y511,
Ch. RC-1077B

Replacement Parts

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
CHASSIS ASSEMBLIES RC 1077B			
74703	Antenna—Antenna loop assembly..... L1	74654	Transformer—Output transformer..... T3
74705	Bracket—Drive cord pulley bracket (R.H.) complete with two (2) pulleys less long bracket.	75486	Transformer—First I.F. transformer complete with adjustable cores..... T1
74704	Capacitor—Variable tuning capacitor—less bracket.. C1-1, C1-2	75487	Transformer—Second I.F. transformer complete with adjustable cores..... T2
39624	Capacitor—Mica, 68 mmf..... C5	33726	Washer—"C" washer for tuning knob shaft
39630	Capacitor—Mica, 120 mmf..... C14	SPEAKER ASSEMBLIES 92585-1	
39632	Capacitor—Mica, 150 mmf..... C20	74706	Speaker—5" x 7" P.M. speaker complete with cone and voice coil
73803	Capacitor—Tubular, paper, .002 mfd, 400 volts..... C9	MISCELLANEOUS	
73599	Capacitor—Tubular, paper, .0025 mfd, 400 volts..... C10	Y2137	Cabinet—Plastic cabinet—maroon—less lid, lid support, meta grille and hinge assemblies
73920	Capacitor—Tubular, paper, .005 mfd, 400 volts..... C12, C17	74713	Clamp—Dial clamp (2 req'd)
73561	Capacitor—Tubular, paper, .01 mfd., 200 volts..... C15	73508	Clip—Spring clip for knob #74710
73562	Capacitor—Tubular, paper, .02 mfd., 400 volts..... C13	74719	Clip—Spring clip for radio compartment back panel
73553	Capacitor—Tubular, paper, .05 mfd., 400 volts, C6, C8, C18, C19	74192	Connector—3 contact male connector for phono cable
75911	Capacitor—Electrolytic comprising 1 section of 80 mfd., 150 volts and 1 section of 50 mfd, 150 volts..... C16A, C16B	74682	Decal—Function switch decal
73935	Clip—Mounting clip for I.F. transformer	74273	Decal—Trade mark decal (Victrola)
74448	Coil—Oscillator coil..... L2	74722	Dial—Polystyrene dial scale
36422	Connector—3 contact female connector for phono input cable, J1	74782	Emblem—"RCA Victor" emblem
30868	Connector—2 contact female connector for motor cable, P3	72894	Foot—Rubber foot (4 req'd)
74702	Control—Volume control..... R10	74707	Grille—Metal grille
72953	Cord—Drive cord (approx. 49" over-all length required)	72692	Hinge—Cabinet lid hinge (2 req'd)
70392	Cord—Power cord and plug	74709	Indicator—Station selector indicator
74454	Gasket—Rubber gasket between speaker and cabinet	74710	Knob—Volume control or tuning knob
74838	Grommet—Strain relief grommet (1 set)	74210	Knob—"Start-Reject" Knob
72283	Grommet—Rubber grommet to mount tuning capacitor	74711	Knob—Function switch knob
72602	Pulley—Drive cord pulley	71116	Lamp—Dial lamp—Type 1490
72313	Resistor—Fuse type, 33 ohms..... R16	74940	Lever—"Start-Reject" actuating lever
	Resistor—Fixed, composition:	74720	Lid—Cabinet lid only
	82 ohms, ±10%, ½ watt..... R17	74717	Mask—End mask for dial (2 req'd)
	150 ohms, ±10%, ½ watt..... R14	74708	Motif—Decorative motif for front of cabinet
	270 ohms, ±10%, ½ watt..... R1	74623	Mounting—One set of hardware consisting of 3 rubber grommets, 3 flat washers, and 3 eyelets to mount record changer
	1000 ohms, ±10%, 1 watt..... R15	74212	Nut—Speed nut for reject knob
	22,000 ohms, ±20%, ½ watt..... R2	74788	Nut—Speed nut for "Start-Reject" actuating lever
	47,000 ohms, ±20%, ½ watt..... R6	72765	Nut—Speed nut to fasten motif (1 req'd) or to fasten dial (2 req'd)
	56,000 ohms, ±10%, ½ watt..... R9	74715	Panel—Radio compartment back panel
	220,000 ohms, ±20%, ½ watt..... R12	74721	Plate—Dial back plate—less dial
	470,000 ohms, ±20%, ½ watt..... R7, R13	73728	Screen—Ventilation screen
	1.0 megohm, ±10%, ½ watt..... R19	74716	Screw—#6-32 x ¼" cross recessed oval head machine screw for radio compartment back panel (3 req'd)
	2.7 megohms, ±10%, ½ watt..... R18	76000	Screw—#6-32 x ¼" special head screw to mount hinges
	3.3 megohms, ±20%, ½ watt..... R5	74718	Spring—Return spring for "Start-Reject" actuating lever
	10 megohms, ±20%, ½ watt..... R11	14270	Spring—Retaining spring for knob #74711
74701	Shaft—Tuning knob shaft and pulley	71824	Stud—Cabinet lid hinge stud and screw (2 req'd)
73584	Shield—Tube shield for 12AV6	74714	Support—Lid support
70827	Socket—Tube socket, octal, wafer		
73117	Socket—Tube socket, 7 pin, miniature		
72998	Socket—Dial lamp socket and lead		
74038	Spring—Drive cord spring		
75910	Switch—Function switch..... S1-1		

† Stock No. 72953 is a reel containing 250 feet of cord.

MODEL 45-W-10,
Ch. RC-1096A



Rear View of Cabinet

FOR RECORD CHANGER SERVICE INFORMATION REFER TO RP-190 SERIES SERVICE DATA.

Specifications

Tuning Range

Standard Broadcast (AM) 540-1,600 kc.
Frequency Modulation (FM) 88-108 mc.
Intermediate Frequencies AM—455 kc., FM—10.7 mc.

Tube Complement

- (1) RCA 6CB6..... R-F Amplifier
- (2) RCA 6J6..... Mixer and Oscillator
- (3) RCA 6BA6..... I-F Amplifier
- (4) RCA 6AU6..... Driver
- (5) RCA 6AL5..... Ratio Detector
- (6) RCA 6AV6..... AM Det.—AVC—A-F Amplifier
- (7) RCA 6CA..... Ph. Inv.
- (8) RCA 6V6GT..... Output
- (9) RCA 6V6GT..... Output
- (10) RCA 5Y3GT..... Rectifier

Dial Lamps (2).....Type No. 51, 6-8 volts, 0.2 amp.
Jewel LampType No. 51, 6-8 volts, 0.2 amp.
Tuning Drive Ratio10:1 (5 turns of knob)
Power Supply Rating 115 volts, 60 cycles, 115 watts

Loudspeaker (92569-12W)

Size and type 12 in. PM
Voice coil impedance 3.2 ohms at 400 cycles

Power Output

(Radio) Undistorted 8 watts.....Maximum 9 watts
(Phono) Undistorted 10 watts.....Maximum 11 watts

Weight97 lbs.

Cabinet Dimensions

Height 32 in. Width 29¼ in. Depth 19¼ in.

Record Changer (RP-190-2)

Turntable speed 45 r.p.m.
Pickup crystalStock No. 75575

MISC. SERVICE INFORMATION

Roll-out Carriage Removal

Each roll-out carriage has two stop pins, (one at the back end of each slide) held in place by retaining spring. To remove roll-out carriage, it is first necessary to pull the retaining springs out of the slides with a pair of long nose pliers, the stop pins are then easily removed. The roll-out carriage may then be removed from the front of the cabinet after disconnecting its connecting cables.

Roll-out Carriage Travel

The roll-out carriages have a normal movement limitation of approximately 10 inches. If they do not have this amount of movement, it may be due to an obstruction or from slippage or creeping of the balls of the slide mechanism. Travel restriction due to slippage or creeping of balls in the slide mechanism can be corrected by exerting slightly greater pull until the normal travel limitation is reached. The carriage should then operate to its full travel with normal pull.

Pickup Height Adjustment

Adjust knurled nut (A) until the distance (during change cycle) between the top of the turntable and the stylus point is approximately 1½".

Pickup Landing Adjustment

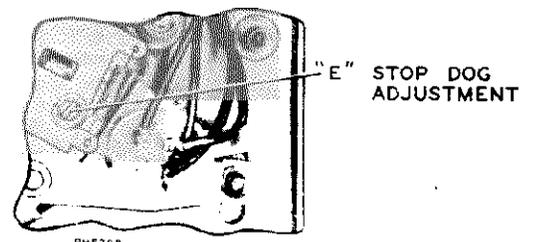
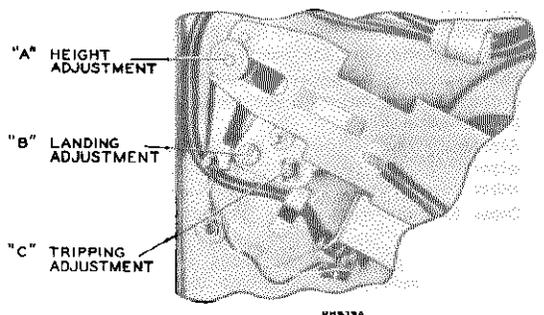
Adjust the screw driver landing adjustment stud (B) so the stylus lands 2⅝" ± ¼" from the side of the center post.

Tripping Adjustment

Adjust the eccentric tripping stud (C) until the mechanism trips when the stylus is 11⅞/32" from the side of the center post.

Stop Dog Adjustment

Turn the eccentric screw (E) until the record drops to the turntable without striking the pickup arm.



MODEL 45-W-10,
Ch. RC-1096A

ALIGNMENT PROCEDURE—CIRCUIT DESCRIPTION—LEAD DRESS

Alignment Procedure
CORRECT ALIGNMENT OF THE FM BAND
REQUIRES THAT THE AM BAND BE
ALIGNED FIRST

Alignment Indicators:

An RCA VoltOhmyst or equivalent meter is necessary for measuring developed d-c voltage during FM alignment. Connections are specified in the alignment tabulation. An output meter is also necessary to indicate minimum audio output during FM Ratio Detector alignment. Connect the output meter across the speaker voice coil.

The RCA VoltOhmyst can also be used as an AM alignment indicator, either to measure audio output or to measure a-v-c voltage.

When audio output is being measured the volume control should be turned to maximum.

Signal Generator:

For all alignment operations connect the low side of the signal generator to the receiver chassis. The output should be adjusted to provide accurate resonance indication at all times. If output measurement is used for AM alignment the output of the signal generator should be kept as low as possible to avoid a-v-c action.

Circuit Description

This instrument has a ten-tube (including rectifier) chassis which is very similar to those used in other RCA Victor radio-phonograph combinations designed for AM-FM reception.

The selector switch has five functions:

- (1) Selection of tuning range.
- (2) Selection and distribution of a.v.c. voltages.
- (3) Application of B+ voltage to tubes.
- (4) Selection of audio input applied to the volume control.
- (5) Change in output tube bias.

In Radio positions R6 is in parallel with R42.

This receiver has built-in antennas for standard broadcast (AM) and frequency modulation (FM) reception.

Provision is made for the use of external antennas if desired.

Critical Lead Dress

Note: The leads listed may not be critical in all receivers. However, by dressing the leads as specified, unusual difficulties will be minimized.

1. The 2.2 meg mixer grid resistor (R10) should have a minimum practicable amount of lead extending on the grid end.
2. The first A.M. and first F.M. I.F. plate leads should be dressed away from the range switch wafer.
3. The ground strap between the R.F. shelf and the main chassis should be well soldered and kept as short as practicable.
4. Arrange wiring to prevent the filament wire between the mixer (6J6) and 1st I.F. (6BA6) tubes from passing near either the mixer grid, or the A.V.C. wiring.
5. Dress filament wires away from all audio coupling condensers.
6. Dress A.C. power switch wires away from the audio coupling condenser (C20) which is wired to the volume control.
7. Dress the mixer grid coupling condenser (C7) away from the lugs on the front range switch wafer.
8. The 1st I.F. tube A.V.C. by-pass condenser (C16) should ground at the same point as the cathode neutralizing loop.
9. The driver tube plate and screen by-pass condensers (C27, C28) should ground at the same point as the neutralizing loop.
10. The mixer plate by-pass condenser (C15) should ground as close to the R.F. shelf ground strap as practicable.
11. The shielded audio leads connecting to the front function switch wafer should have a minimum of exposed lead on the function switch end.

AM Alignment

FUNCTION SWITCH IN AM POSITION

Steps	Connect high side of sig. gen. to—	Sig. gen. output	Turn radio dial to—	Adjust for max. output
1	Stator of C1-4	455 KC	Quiet point at low freq. end.	† Bottom (sec.) & top (pri.) cores of T4 † Top (sec.) & bottom (pri.) cores of T2
2	AM ant. terminal thru 200 mmf.	1620 KC	Extreme high frequency end.	C1-2 trimmer (osc.)
3		1400 KC	1400 KC Signal	C1-4 trimmer (r. f.) C1-3 trimmer (ant.)
4		800 KC	800 KC Signal	‡ L5 (osc.) L7 (r. f.)
5	Repeat steps 2, 3 and 4			

† First peak T2 and T4 then starting with T4, use alternate loading. Connect a 47,000-ohm resistor across the primary to load the plate winding while the grid winding of the same transformer is being peaked. Then load the grid winding with the 47,000-ohm resistor while the plate winding is being peaked.

‡ With a 10,000-ohm resistor shunted across C1-4, peak the oscillator core L5, simultaneously "rocking" the gang condenser for maximum output. Then, remove the 10,000-ohm shunt resistor and peak L7 for maximum output.

FM Alignment

FUNCTION SWITCH IN FM POSITION—VOLUME CONTROL MAXIMUM

Steps	Connect high side of sig. gen. to—	Sig. gen. output	Turn radio dial to—	Adjust for max. output
1	Connect the d-c probe of a VoltOhmyst to the negative lead of the 2 mid. capacitor C40 and the common lead to chassis. Adjust sig. gen. output to provide approx. —3 v. indication during alignment.			
2	Pin #1 of 6AU6 (V4) in series with .01 mf.	10.7 mc AM modulated	—	Top of driver trans. T5 for max. d-c voltage
3				Bottom of driver trans. T5 for min. audio output
4	Repeat steps 2 and 3			
5	Thru 470 ohms to C1-3. Connect gnd. end of cable close to V2 cathode ground on r-f shelf	10.7 mc	88 mc	* Top (sec.) & bottom (pri.) cores of T3 * Top (sec.) & bottom (pri.) cores of T3
6	To FM antenna terminals thru 120 ohms in each side of line	90 mc	90 mc	L8 (osc.)
7		106 mc	106 mc Signal	C1-6 trimmer (ant.) and C1-3 trimmer (r. f.)
8		90 mc	90 mc Signal	L1 (ant.) and L2 (r. f.)
9	Repeat steps 6, 7 and 8			
10	Connect a sweep generator to the antenna terminals thru 120 ohms in each side of line. Connect an oscilloscope to junction of R44 and C41 to check response and linearity of FM band. Peak to peak separation should not be less than 180 kc.			

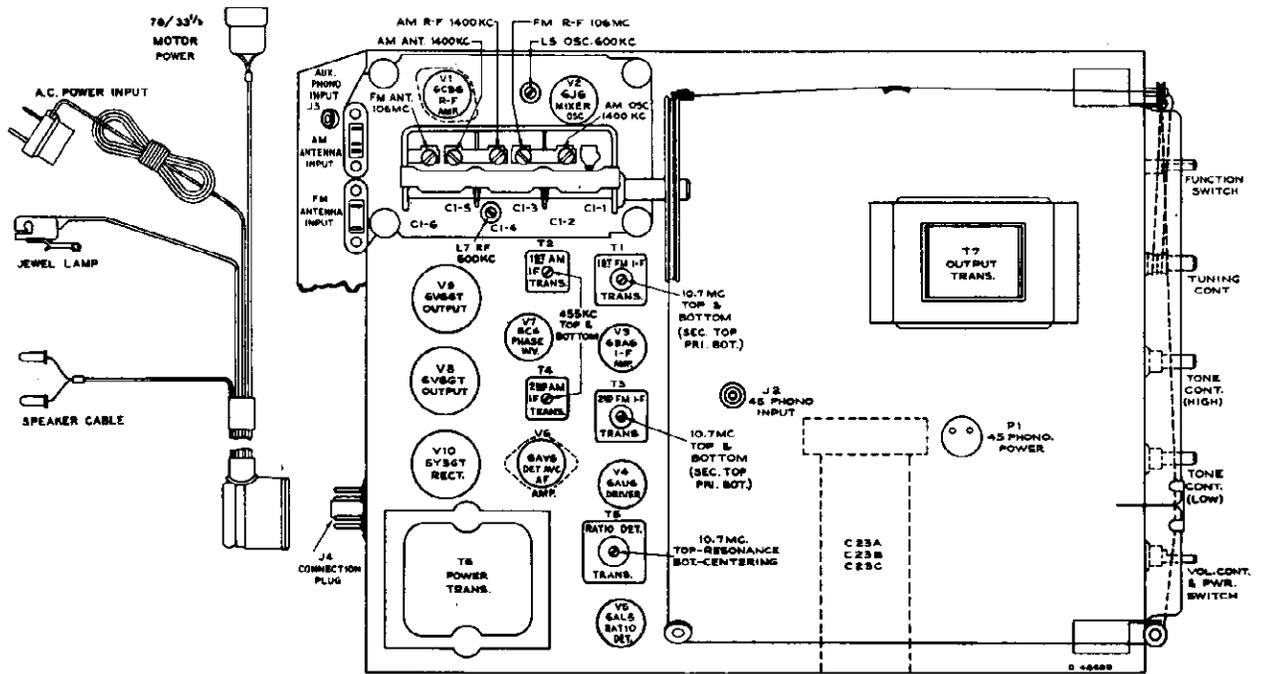
† Two or more points may be found which lower the audio output. At the correct point the minimum audio output is approached rapidly and is much lower than at any incorrect point.

* Use a 680 ohm resistor to load the plate winding while the grid winding of the same trans. is being peaked. Then the grid winding is loaded with the 680 ohm resistor while the plate winding is being peaked. When windings are loaded, it is necessary to increase the 10.7 mc input to maintain the —3 volts indication.

L8, L1 and L2 are adjustable by increasing or decreasing the spacing between turns. Oscillator signal tracks above signal frequency.

MODEL 45-W-10,
Ch. RC-1096A

TUBE AND TRIMMER LOCATIONS—VOLTAGE DATA



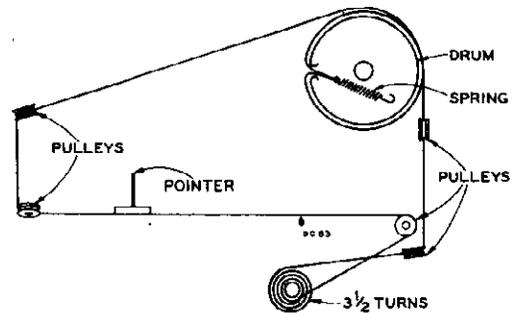
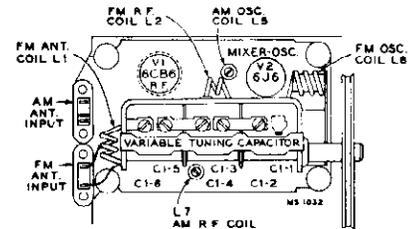
Tube and Trimmer Locations

Socket Voltages

Voltages measured with Chanalyst or VoltOhmyst and should hold within $\pm 20\%$ with rated line voltage. Tuning condenser closed—no signal input.

Tube	Terminal	Voltage		
		Phono	A.M.	F.M.
V1 6CB6 R.F. Amp.	Plate 5	—	203	132
	Screen 6	—	48	39
	Cathode 2	—	0.2	0.2
	Grid 1	—	-1.1	-0.9
V2 6J6 Mixer and Osc.	Plate 2	—	55	51
	Grid 5	—	-1.4	-1.2
	Plate 1	—	33	27
	Grid 6	—	-2.1	-1.9
V3 6BA6 L.F. Amp.	Plate 5	—	192	180
	Screen 6	—	106	101
	Cathode 7	—	0.9	—
	Grid 1	—	-1.1	-0.35
V4 6AU6 Driver	Plate 5	—	188	180
	Screen 6	—	122	120
	Cathode 7	—	1.05	1.07
V5 6AL5 Ratio Det.	—	—	—	—
V6 6AV6 A.F. Amp.	Plate 7	112	94	94
	Grid 1	-0.7	-0.7	-0.7
V7 6C4 Ph. Inverter	Plate 1-5	125	87	85
	Grid 6	-19.2	-16	-16
	Cathode 7	-11.1	-11.4	-11.4
V8 6V6GT or Output V9	Plate 3	305	295	296
	Screen 4	299	208	204
	Grid 5	-19.2	-16	-16
V10 5Y3GT Rectifier	Filament 2	314	313	313

F. M. Coil
Locations

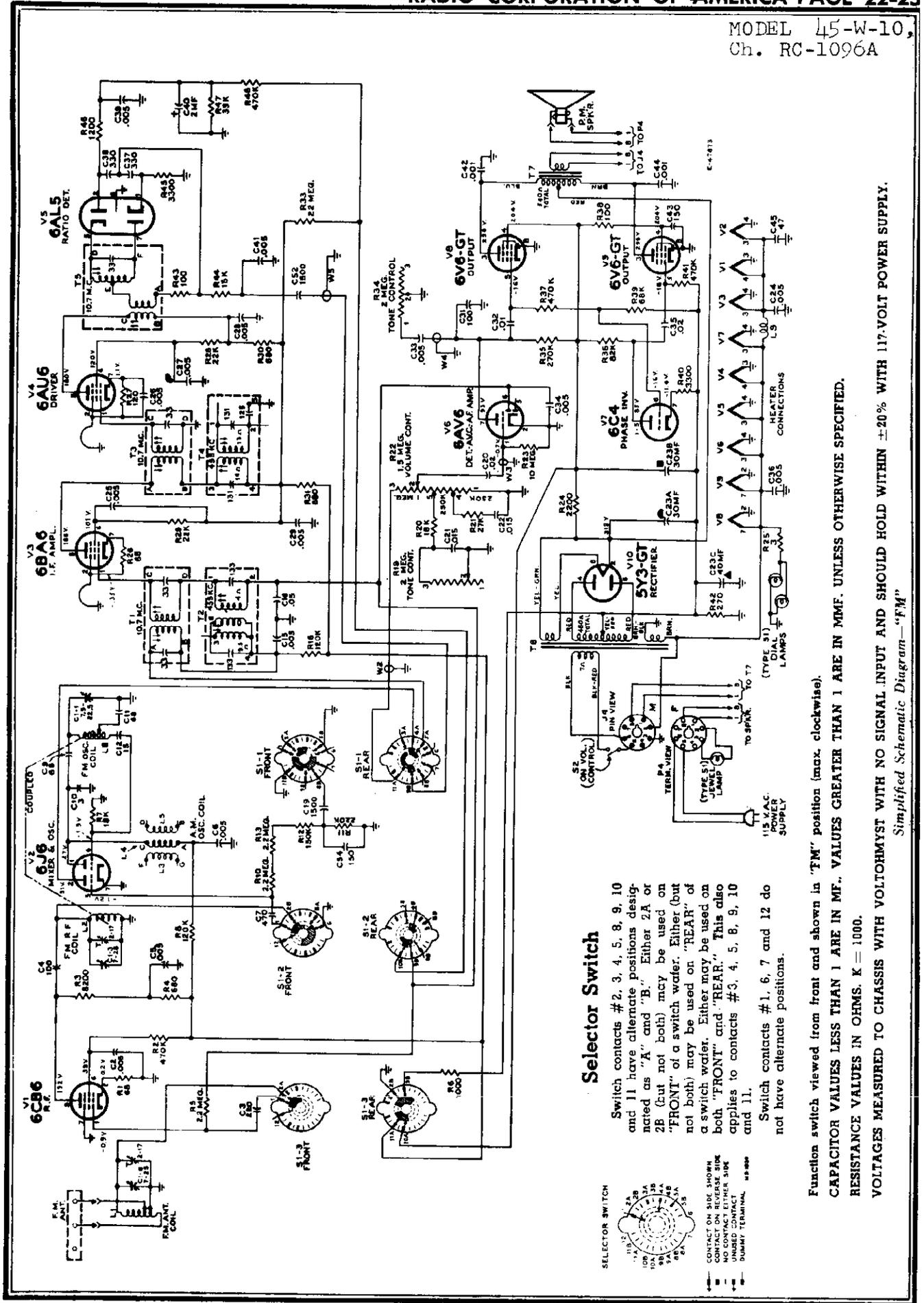


Dial Cord and Drive Assembly

Cathode Currents (Ma.)

Tube	Terminal	Phono	A.M.	F.M.
V1 6CB6	2	—	3	3
V2 6J6	7	—	2.8	2.8
V3 6BA6	7	—	13.2	14.7
V4 6AU6	7	—	9.3	8
V5 6AL5	1 & 5	—	—	—
V6 6AV6	2	0.8	0.5	0.5
V7 6C4	7	—	2.2	1.5
V8 6V6GT	8	35.8	17.8	17.7
V9 6V6GT	8	35.8	17.8	17.7
10 5Y3GT	2	74.2	73.6	74.2

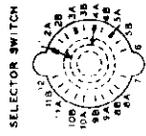
MODEL 45-W-10,
Ch. RC-1096A



Selector Switch

Switch contacts #2, 3, 4, 5, 8, 9, 10 and 11 have alternate positions designated as "A" and "B." Either 2A or 2B (but not both) may be used on "FRONT" of a switch wafers. Either (but not both) may be used on "REAR" of a switch wafers. Either may be used on both "FRONT" and "REAR." This also applies to contacts #3, 4, 5, 8, 9, 10 and 11.

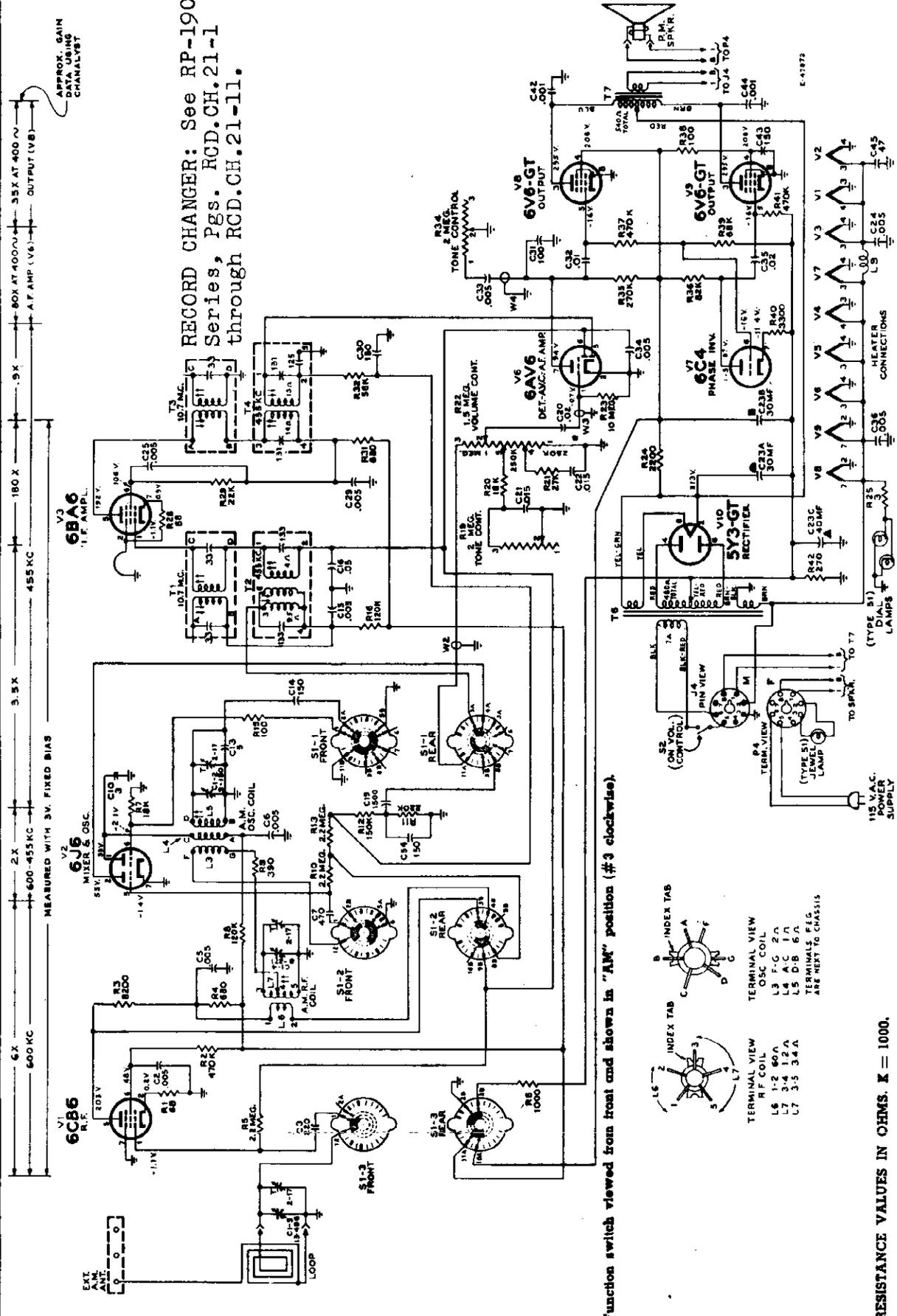
Switch contacts #1, 6, 7 and 12 do not have alternate positions.



Function switch viewed from front and shown in "FM" position (max. clockwise). CAPACITOR VALUES LESS THAN 1 ARE IN MF., VALUES GREATER THAN 1 ARE IN MMF. UNLESS OTHERWISE SPECIFIED. RESISTANCE VALUES IN OHMS. K = 1000. VOLTAGES MEASURED TO CHASSIS WITH VOLTORMYST WITH NO SIGNAL INPUT AND SHOULD HOLD WITHIN ±20% WITH 117-VOLT POWER SUPPLY.

Simplified Schematic Diagram—"FM"

MODEL 45-W-10,
Ch. RC-1096A

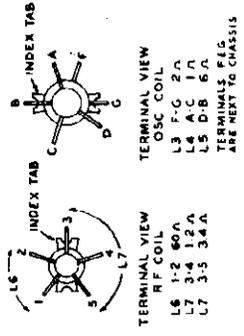


APPROX. GAIN
VALUES IN
GRAMMAYST

RECORD CHANGER: See RP-190
Series, Pgs. RCD.CH.21-1
through RCD.CH.21-11.

6X 600 KC
2X 56V
600-455 KC
3.3X
180X
455 KC
9X
80X AT 400 V
A.F. AMP (V6)
35X AT 400 V
OUTPUT (V8)

Function switch viewed from front and shown in "AM" position (#3 clockwise).

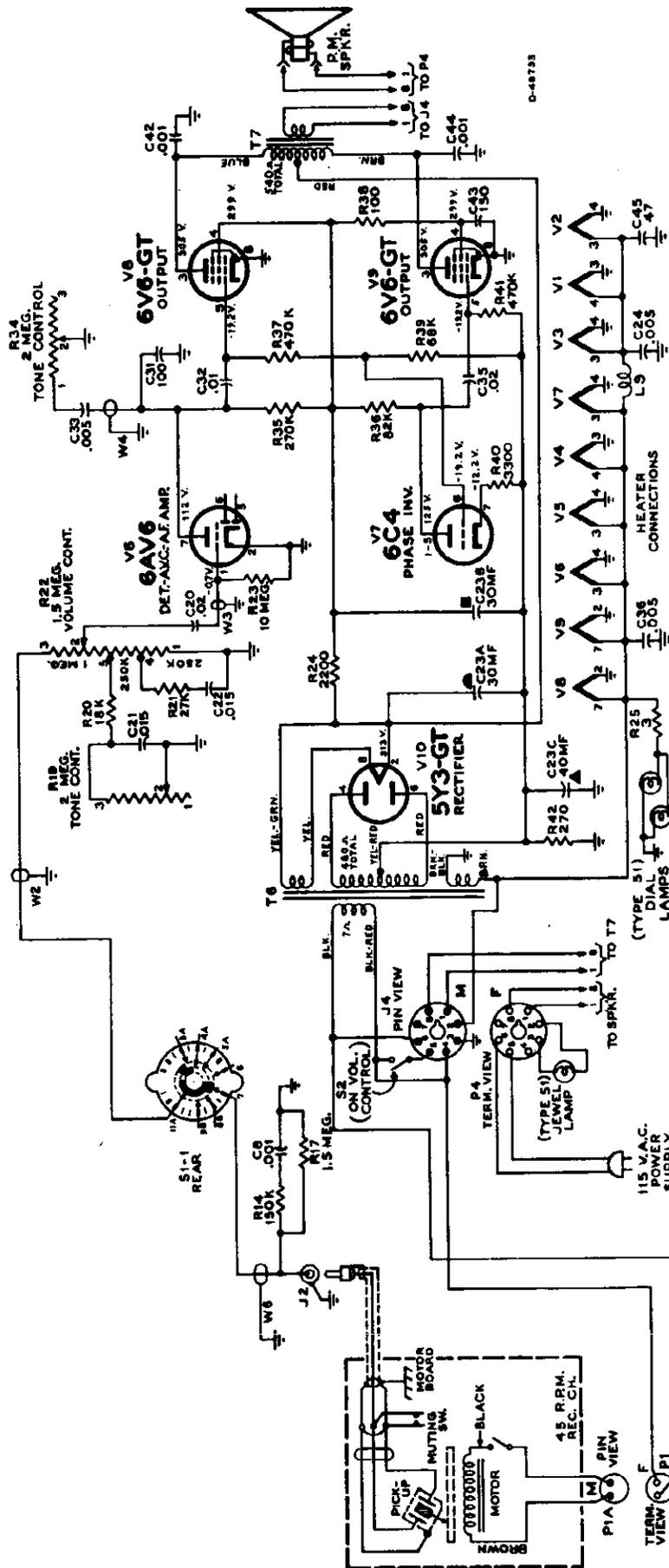


TERMINAL VIEW
OSC COIL
L3 F-C 2A
L4 F-C 2A
L5 F-C 2A
L6 F-C 2A
L7 F-C 2A
L8 F-C 2A
L9 F-C 2A
L10 F-C 2A
L11 F-C 2A
L12 F-C 2A
L13 F-C 2A
L14 F-C 2A
L15 F-C 2A
L16 F-C 2A
L17 F-C 2A
L18 F-C 2A

RESISTANCE VALUES IN OHMS. K = 1000.
CAPACITOR VALUES LESS THAN 1 ARE IN MF., VALUES GREATER THAN 1 ARE IN MMF. UNLESS OTHERWISE SPECIFIED.
VOLTAGES MEASURED TO CHASSIS WITH VOLTOHMYST WITH NO SIGNAL INPUT AND SHOULD HOLD WITHIN ±20% WITH 117-VOLT POWER SUPPLY.

Simplified Schematic Diagram—"AM"

MODEL 45-W-10,
Ch. RC-1096A



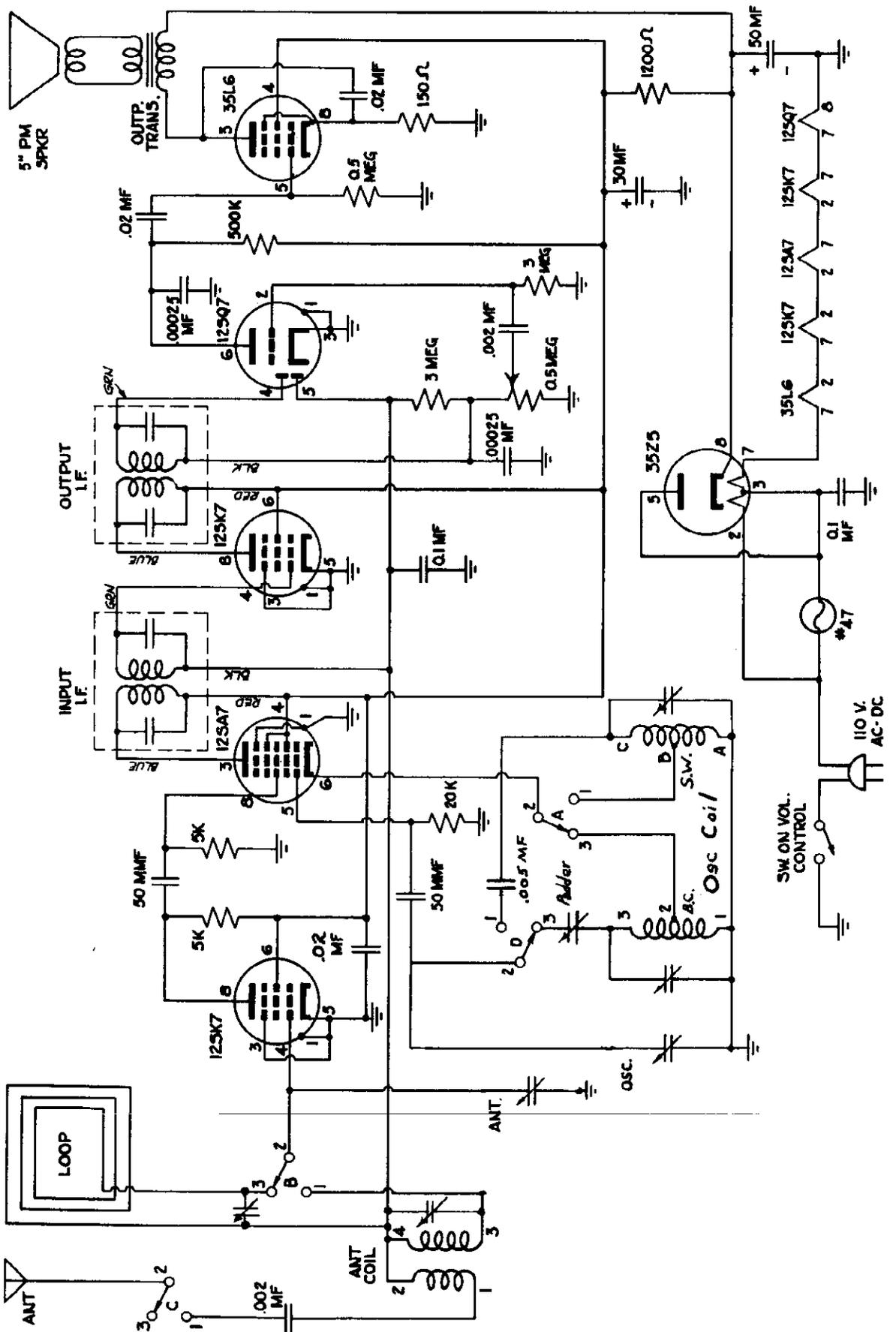
Notes: When the function switch is in "Phono 45" or "Phono Aux." position the B+ supply voltage tubes V1, V2, V3 and V4 is disconnected at switch section S1-3 rear. This results in higher plate and screen voltages on V6, V7, V8 and V9. The bias resistor R6 (in parallel with R42 in AM and FM positions) is also disconnected at S1-3 rear. This results in higher grid bias voltage on V8 and V9.

FUNCTION SWITCH VIEWED FROM FRONT AND SHOWN IN "PHONO 45" POSITION (#2 CLOCKWISE). CAPACITOR VALUES LESS THAN 1 ARE IN MF. VALUES GREATER THAN 1 ARE IN MMF. UNLESS OTHERWISE SPECIFIED. RESISTANCE VALUES IN OHMS. K = 1000. VOLTAGES MEASURED TO CHASSIS WITH VOLTOHMIST WITH NO SIGNAL INPUT AND SHOULD HOLD WITHIN ±20% WITH 117-VOLT POWER SUPPLY.

Simplified Schematic Diagram—"Phono 45"

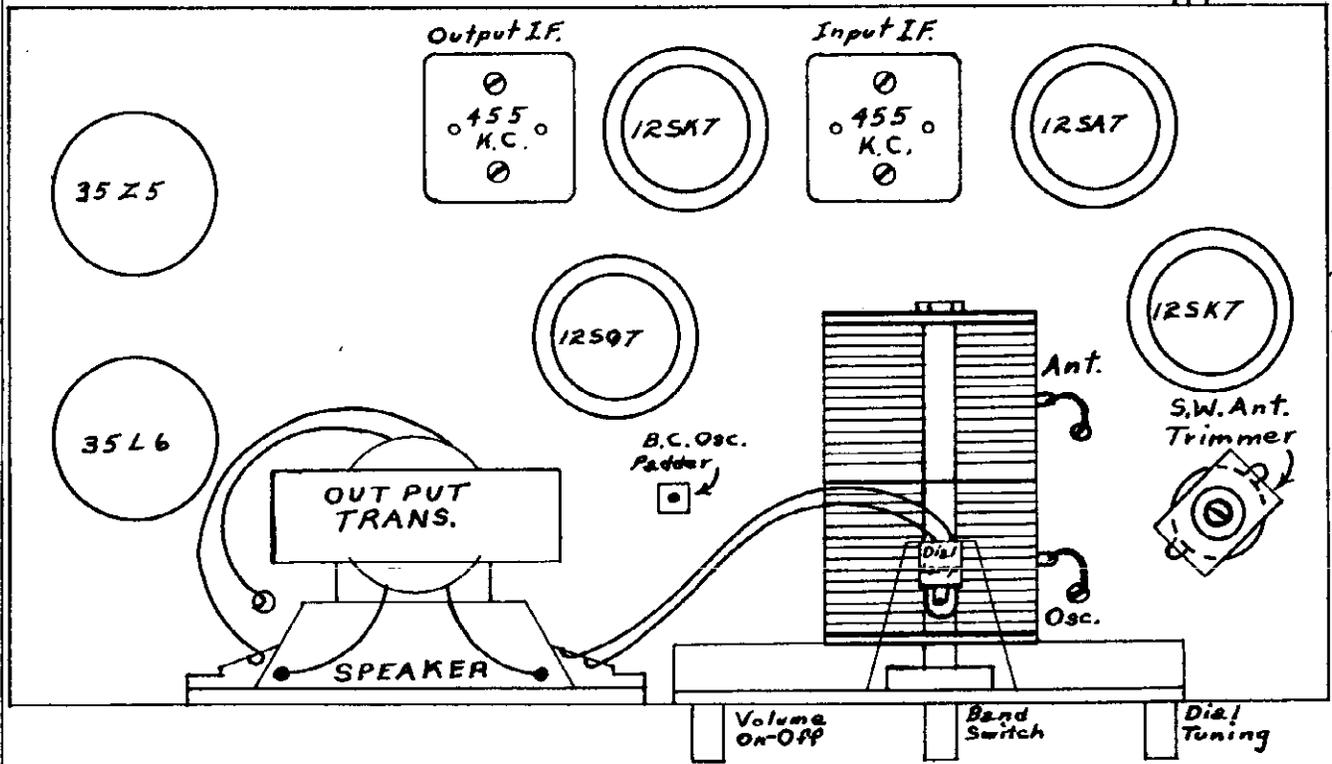
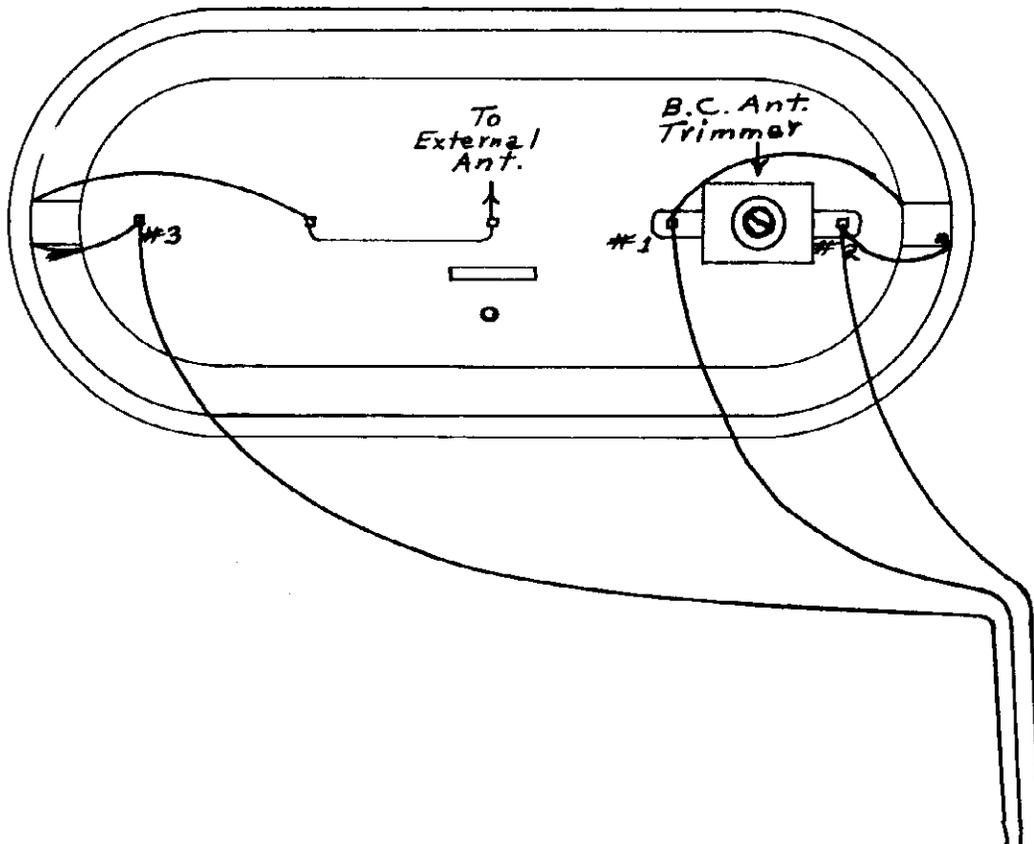
Replacement Parts

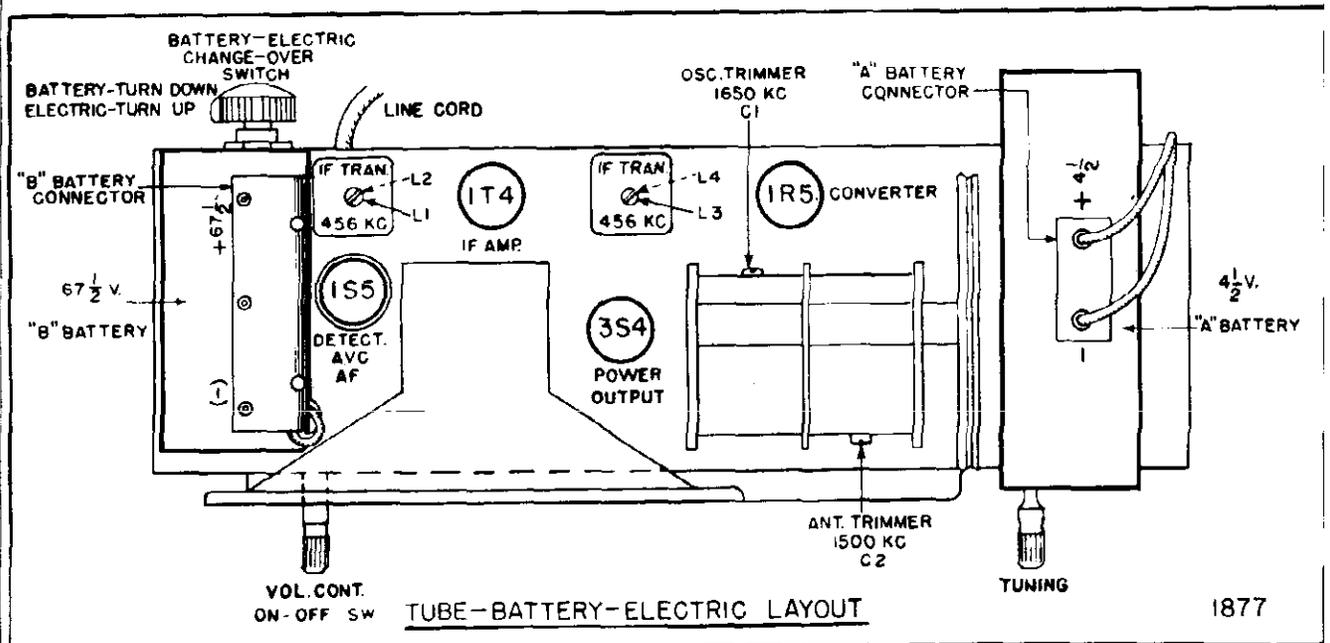
STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
CHASSIS ASSEMBLIES RC1096A			
75567	Capacitor—Variable tuning capacitor (C1-1, C1-2, C1-3, C1-4, C1-5, C1-6)	74038	Spring—Drive cord spring
74733	Capacitor—Ceramic, 3 mmf. (C10)	74847	Support—Polystyrene support for P.M. oscillator coil complete with mounting bracket
75613	Capacitor—Ceramic, 5 mmf. (C13)	75602	Switch—Function switch (S1)
38044	Capacitor—Ceramic, 15 mmf. (C12)	75557	Transformer—Output transformer (T7)
75608	Capacitor—Ceramic, 47 mmf. (C45)	75566	Transformer—Power transformer, 117 volts/60 cycle (T8)
75612	Capacitor—Ceramic, 68 mmf. (C8, C11)	73743	Transformer—Ratio detector transformer (T5)
39396	Capacitor—Ceramic, 100 mmf. (C4)	75558	Transformer—First I-F transformer (A.M.) complete with adjustable screws (T2)
75437	Capacitor—Ceramic, 100 mmf. (C31)	73037	Transformer—Second I-F transformer (A.M.) complete with adjustable screws (T4)
75614	Capacitor—Ceramic, 150 mmf. (C14, C30, C43, C54)	75559	Transformer—First I-F transformer (F.M.) complete with adjustable screws (T1)
75611	Capacitor—Ceramic, 220 mmf. (C3)	75560	Transformer—Second I-F transformer (F.M.) complete with adjustable screws (T3)
39640	Capacitor—Mica, 330 mmf. (C37, C38)	33726	Washer—"C" washer for tuning knob shaft
39644	Capacitor—Mica, 470 mmf. (C7)	ROLLOUT MECHANISM	
75610	Capacitor—Ceramic, 1500 mmf. (C19, C52)	76208	Decal—Control function decal
73473	Capacitor—Ceramic, 5000 mmf. (C2, C3, C6, C15, C24, C25, C27, C28, C29, C34, C36)	75572	Dial—Polystyrene dial scale
73747	Capacitor—Electrolytic, 2 mfd, 50 volts (C40)	76161	Frame—Moulded frame—maroon—for mounting radio chassis and 45 RPM changer for mahogany or walnut instruments
72052	Capacitor—Electrolytic, comprising 1 section of 30 mfd, 450 volts, 1 section of 30 mfd, 350 volts, and 1 section of 40 mfd, 25 volts (C23A, C23B, C29C)	76162	Frame—Moulded frame—light brown—for mounting radio chassis and 45 RPM changer for oak instruments
73901	Capacitor—Tubular, paper, .001 mfd, 400 volts (C8)	76165	Handle—Metal pullout handle for mounting frame
70642	Capacitor—Tubular, paper, .001 mfd, 1000 volts (C42, C44)	75555	Screw—#8-32 x 5/8" cross recessed pan head screw to mount radio chassis (4 req'd)
73920	Capacitor—Tubular, paper, .005 mfd, 400 volts (C26, C39, C39, C41)	SPEAKER ASSEMBLIES	
73561	Capacitor—Tubular, paper, .01 mfd, 400 volts (C32)	92569-12W	
73797	Capacitor—Tubular, paper, .015 mfd, 400 volts (C21, C22)	RL 111A1	
71828	Capacitor—Tubular, paper, .02 mfd, 200 volts (C22)	13887	Cap—Dust cap
73562	Capacitor—Tubular, paper, .02 mfd, 400 volts (C35)	75682	Cone—Cone complete with voice coil (3.2 ohms)
73553	Capacitor—Tubular, paper, .05 mfd, 400 volts (C16)	75681	Speaker—12", P.M. speaker complete with cone and voice coil (3.2 ohms)
73935	Clip—Mounting clip for A.M. I-F transformers	NOTE:—If stamping on speaker in instrument does not agree with above speaker number, order replacement parts by referring to model number of instrument, number stamped on speaker and full description of part required.	
75569	Coil—Oscillator coil—A.M.—complete with adjustable screws (L3, L4, L5)	MISCELLANEOUS	
75570	Coil—R.F. coil—A.M.—complete with adjustable core (L6, L7)	71864	Antenna—F-M antenna
71942	Coil—Filament choke coil (L8)	75705	Antenna—Antenna loop complete less cable
75615	Coil—Antenna coil—F.M (L1)	75900	Back—Back cover—maroon—for radio-phonograph compartment for mahogany or walnut instruments (assembled to rollout)
74815	Coil—R-F coil—F.M (L2)	75901	Back—Back cover—light brown—for radio-phonograph compartment for oak instruments (assembled to rollout)
74817	Coil—Oscillator coil—F.M (L8)	73680	Board—"A.F.M." terminal board
35787	Connector—Single contact female connector for phono cables (J2, J3)	75694	Bracket—Stop bracket less rubber bumper for radio phono compartment rollout
75542	Connector—8 contact male connector for power input cable (J4)	71599	Bracket—Pilot lamp bracket
75543	Connector—2 contact female connector for 45 RPM motor cable (P1)	75696	Bumper—Rubber bumper for rollout stop bracket
74879	Connector—2 contact female connector for antenna leads	72437	Cable—Shielded pickup cable complete with pin plug
75537	Control—Volume control and power switch (R22, R2)	13103	Cap—Pilot lamp cap
75561	Control—Tone control—L.F. (R19)	71992	Catch—Bullet catch and strike for cabinet doors
75562	Control—Tone control—H.F. (R34)	X3144	Cloth—Grille cloth for mahogany or walnut instruments
72853	Card—Drive card (approx. 68" overall)	X3089	Cloth—Grille cloth for oak instruments
75564	Coupling—Spring coupling for function switch extension shaft	74882	Connector—2 contact (polarized) male connector for A-M antenna loop cable
75556	Cover—Insulating cover for electrolytic	75709	Connector—8 contact female connector less shell for main cable
74839	Fastener—Push fastener for mounting R.F. shelf (4 req'd)	75474	Connector—Single contact male connector for speaker (2 req'd)
18058	Grommet—Rubber grommet for mounting R.F. shelf (4 req'd)	74752	Connector—2 contact male connector for FM antenna terminal board cable
75547	Grommet—Rubber grommet to mount slides to bottom—rear (2 req'd)	30870	Connector—2 contact male connector for AC power cable for 45 RPM changer
75548	Grommet—Rubber grommet to mount slides to bottom—front (2 req'd)	71984	Decal—Trade mark decal (RCA Victor)
11765	Lamp—Dial lamp—Mazda #51	74273	Decal—Trade mark decal (Victrola)
75544	Nut—Rivnut to fasten screw for mounting chassis (4 req'd)	37396	Grommet—Rubber grommet for mounting speaker
18469	Plate—Bakelite mounting plate for electrolytic	74838	Grommet—Power cord strain relief (1 set)
75535	Plate—Dial back plate complete with three (3) pulleys	75697	Grommet—Rubber grommet for mounting record changer (3 req'd)
75536	Pointer—Station selector indicator	74308	Hinge—Cabinet door hinge (1 set)
72602	Pulley—Drive cord pulley	75714	Knob—Function switch knob—maroon—for mahogany or walnut instruments
72323	Resistor—Wire wound, 3 ohms, 1/2 watt (R25)	75715	Knob—Function switch knob—tan—for oak instruments
73637	Resistor—Wire wound, 2200 ohms, 5 watts (R24)	75712	Knob—Tuning control, tone control or volume control and power switch knob—maroon—for mahogany or walnut instruments
	Resistor—Fixed, composition:—	75713	Knob—Tuning control, tone control or volume control and power switch knob—tan—for oak instruments
	68 ohms, ±10%, 1/2 watt (R1, R26)	11765	Lamp—Pilot lamp—Mazda #51
	100 ohms, ±10%, 1/2 watt (R15, R38, R3)	73634	Nut—Speed nut for speaker mounting screws
	120 ohms, ±10%, 1/2 watt (R27)	75908	Pull—Door pull
	270 ohms, ±5%, 2 watts (R42)	75920	Screw—#10-24 x 1" trimit head screw for door pull
	390 ohms, ±10%, 1/2 watt (R9)	75708	Shell—Shell for 8 contact female connector #75709
	680 ohms, ±10%, 1/2 watt (R4)	31364	Socket—Pilot lamp socket
	680 ohms, ±20%, 1/2 watt (R30, R31)	74734	Spring—Retaining spring for knobs
	1000 ohms, ±10%, 1/2 watt (R6)	75902	Spring—Suspension spring for main cable
	1200 ohms, ±5%, 1/2 watt (R48)	72936	Stop—Cabinet door stop
	3300 ohms, ±5%, 1/2 watt (R40, R45)		
	8200 ohms, ±10%, 1 watt (R3)		
	15,000 ohms, ±10%, 1/2 watt (R44)		
	18,000 ohms, ±10%, 1/2 watt (R7, R20)		
	22,000 ohms, ±10%, 1/2 watt (R28, R29)		
	27,000 ohms, ±10%, 1/2 watt (R21)		
	39,000 ohms, ±5%, 1/2 watt (R47)		
	56,000 ohms, ±10%, 1/2 watt (R32)		
	68,000 ohms, ±10%, 1/2 watt (R38)		
	82,000 ohms, ±10%, 1/2 watt (R36)		
	120,000 ohms, ±10%, 1/2 watt (R8, R16)		
	150,000 ohms, ±10%, 1/2 watt (R12, R14)		
	220,000 ohms, ±20%, 1/2 watt (R11)		
	270,000 ohms, ±10%, 1/2 watt (R35)		
	470,000 ohms, ±10%, 1/2 watt (R2, R37, R41, R48)		
	1.5 megohm, ±10%, 1/2 watt (R17)		
	2.2 megohm, ±20%, 1/2 watt (R5, R10, R13)		
	10 megohm, ±20%, 1/2 watt (R23)		
	22 megohm, ±20%, 1/2 watt (R33)		
75540	Shaft—Tuning knob shaft		
75565	Shaft—Extension shaft for function switch		
75584	Shield—Tube shield		
75546	Slide—Slide mechanism complete for radio chassis bottom		
31251	Socket—Tube socket, octal, wafer		
73117	Socket—Tube socket, 7 pin, miniature		
74179	Socket—Tube socket, 7 pin, miniature for 6BC6-6J8		
31364	Socket—Dial lamp socket		
75563	Spring—Retaining spring for function switch extension shaft		

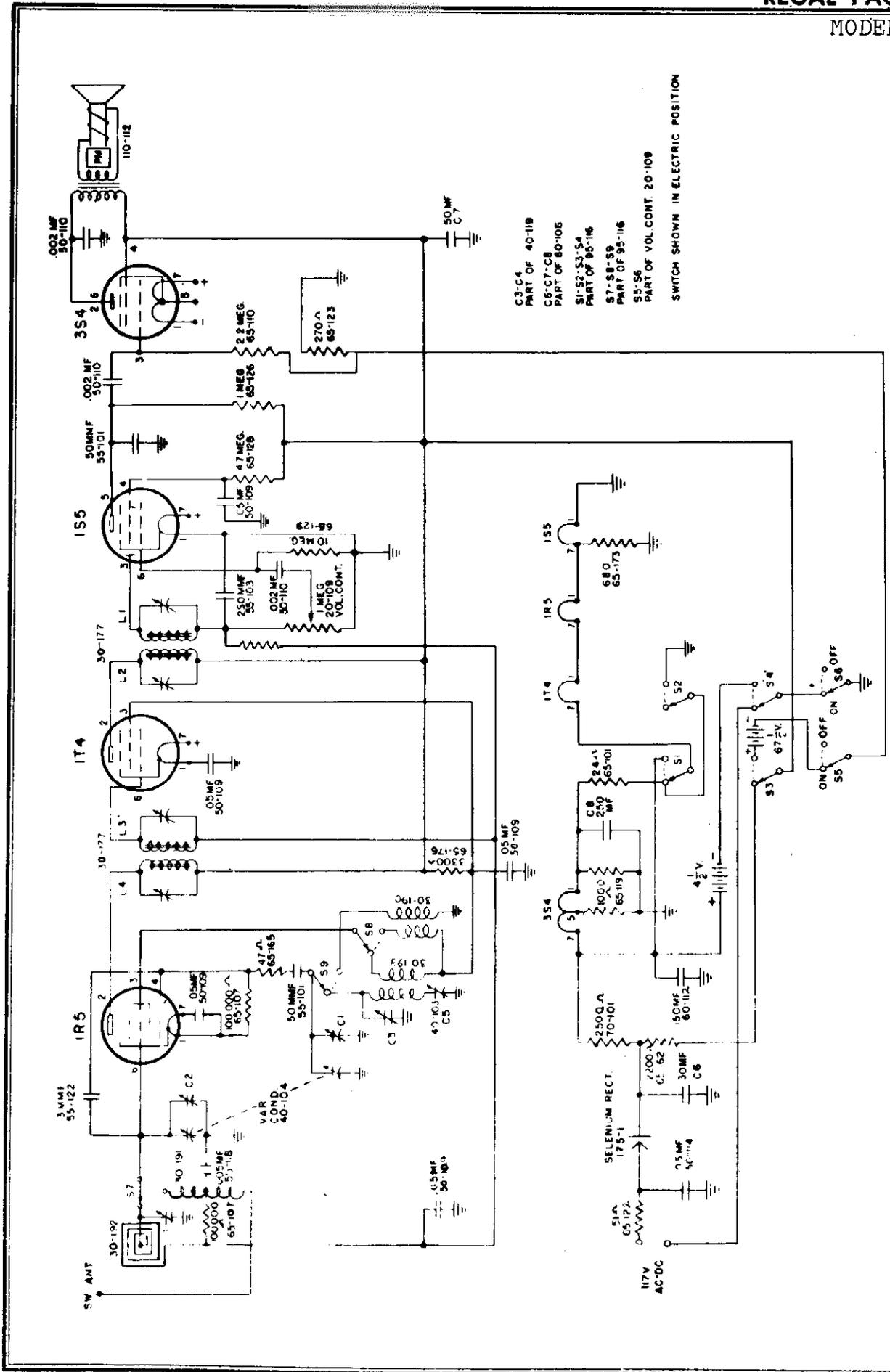


PAGE 22-2 RADIO KITS

MODEL S6X-1







- C3-C4 PART OF 40-119
- C5-C7-C8 PART OF 80-106
- S1-S2-S3-S4 PART OF 95-116
- S7-S8-S9 PART OF 95-116
- S5-S6 PART OF VOL. CONT. 20-109

SWITCH SHOWN IN ELECTRIC POSITION

MODEL 1878

BATTERIES REQUIRED:

- 1 "A" Battery, 4½ Volt, Eveready No. 746 or equivalent.
- 1 "B" Battery, 67½ Volt, Eveready No. 467 or equivalent.

- 1. INSTALLATION OF "A" BATTERY:** To replace or install battery, open rear cover, remove old battery and pull out connector and insert same into new battery; then very carefully push battery into space provided for it, making certain that battery is pushed forward to front of cabinet.
- 2. INSTALLATION OF "B" BATTERY:** Swing down the battery holding clip, remove old battery and pull out connector and insert same into new battery; then slip into space provided for it and swing holding clip upward to press against battery.
- 3. TO OPERATE ON BATTERIES:** Open rear cover, turn changeover switch knob to battery position. The left hand knob in front operates the volume control and turns set on and off. Adjust to desired volume. The right hand knob is calibrated in kilocycles (KC) with the final zero omitted.
- 4. SW OPERATION:** Open rear cover, turn band switch to SW position. It will be necessary to connect an antenna wire of about 30 to 50 feet to the single wire coming through the rear of chassis. The short-wave portion of the dial is calibrated in megacycles (MC) and in meters (M).
- 5. TO OPERATE ON ELECTRIC:** Open rear cover, turn changeover switch knob to electric position. Remove line cord and plug into nearest wall outlet; then

proceed to operate receiver as outlined in previous paragraph. A slot is provided in the lower part of the cover so that it may be closed.

- 6. NOTE** — If receiver does not operate on DC after being turned on for a few minutes, reverse the line cord in the wall outlet. If the receiver is to be operated for a long period of time on AC or DC, or it is to be placed in storage, we recommend that the batteries be removed and stored in a cool place. This will insure maximum battery life.
- 7. CAUTION** Be sure to turn the volume control knob "OFF" (extreme counter clock-wise position) when receiver is not in use to avoid discharge of batteries. Do not leave exhausted batteries in receiver.
- 8. REAR COVER WILL NOT STAY CLOSED:** This is generally due to batteries not being properly installed. Refer to previous paragraph on battery installation.
- 9. ELECTRICAL SPECIFICATIONS:** This receiver employs a 4-tube super-heterodyne circuit of 8 tuned stages. The frequency range is from 1650 to 540 KC, and 18.3 to 5.8 MC. The tube compliment is as follows: 1-1R5, 1-1T4, 1-1S5 and 1-3S4. See diagram for location of batteries and tubes.
- 10. IF SET DOES NOT OPERATE ON ELECTRIC OR BATTERY** Check and be sure tubes are firmly in position in their sockets.
If Tubes have a milky white formation they should be removed and tested or replaced.
- 11. SET DEVELOPS MICROPHONIC HOWL** Check 1S5 Tube. Replace with new tube if necessary.

