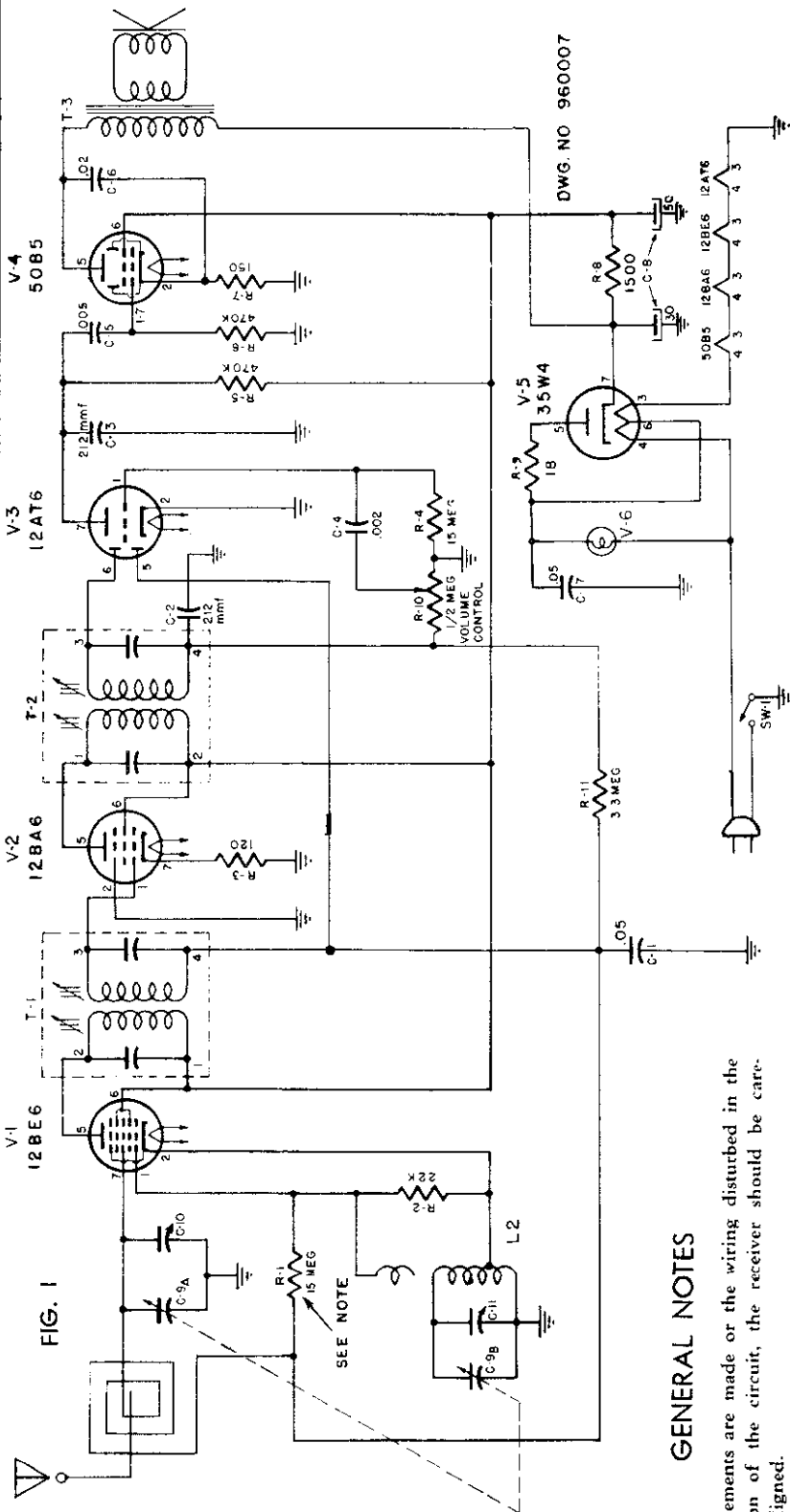


MODELS 642, Ch. 120117A;
 652, Ch. 120032B;
 653, Ch. 120080B

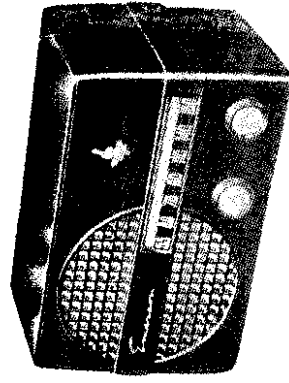


SCHEMATIC FOR MODEL 642 USING CHASSIS 120117A.

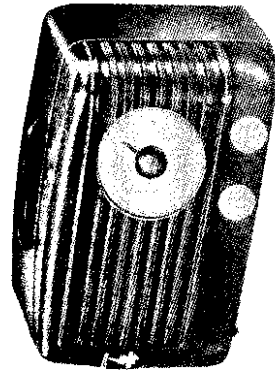
NOTE: R-1 NOT IN LATER SETS.

GENERAL NOTES

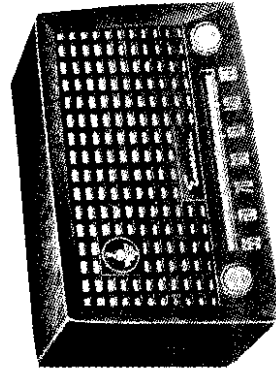
1. If replacements are made or the wiring disturbed in the r-f section of the circuit, the receiver should be carefully realigned.
2. In operating the receiver on d.c., it may be necessary to reverse the line plug for correct polarity.
3. All models have self-contained antennas and do not require additional antenna connections. For permanent home installations, however, if it is desired to improve reception of weak stations, an additional outdoor antenna may be used. For this purpose a lead has been brought out in the rear near the line cord. Use no ground connection.
4. The self-contained loop antenna operates at maximum efficiency when its position is at right angles to the broadcasting source. It is important, therefore, once the station is tuned in, to rotate the cabinet back and forth through a quarter of a circle (90 degrees), leaving it at the position where the station is received with maximum volume.



MODEL 652
 Chassis 120032B



MODEL 642
 Chassis 120117A

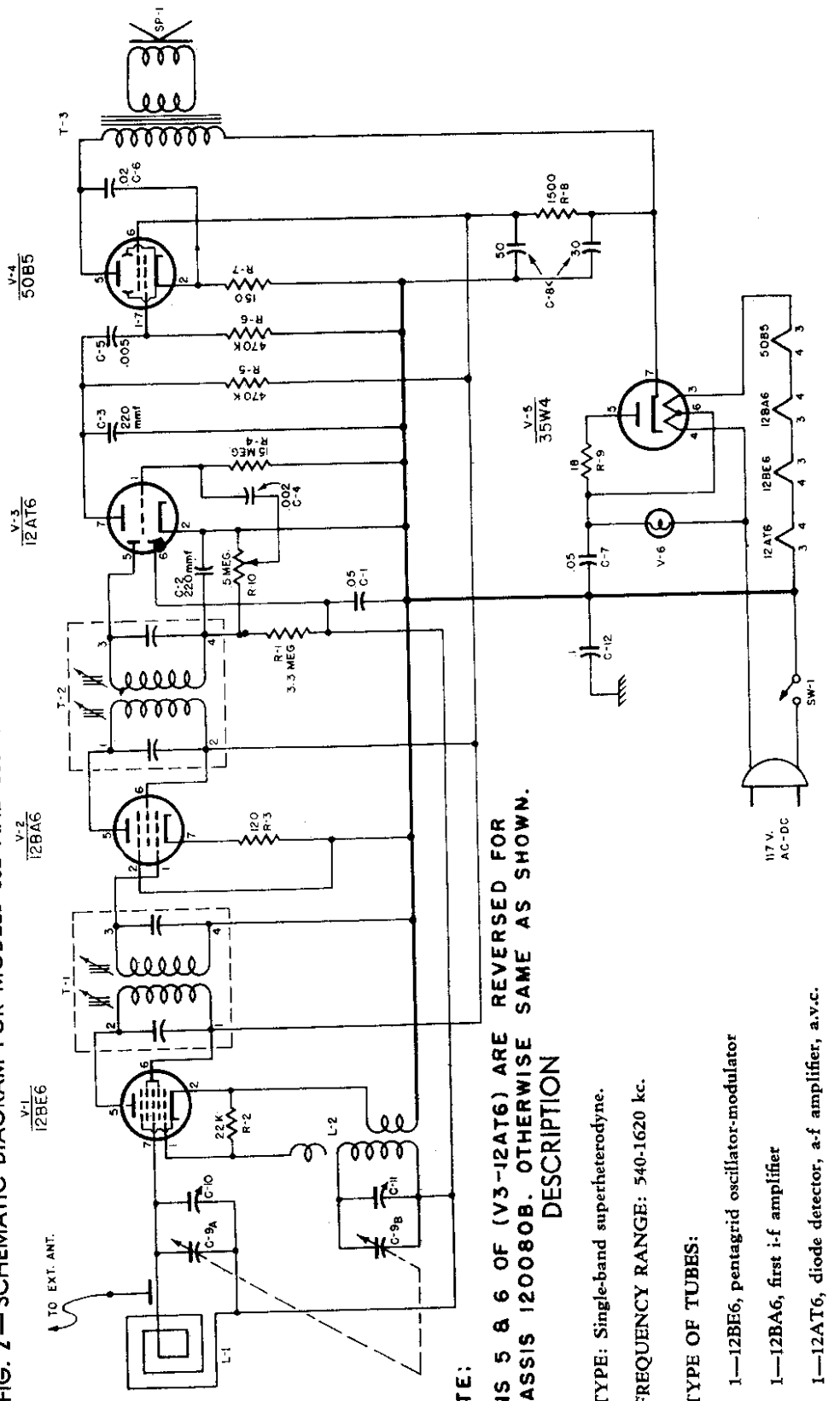


MODEL 653
 Chassis 120080B

MODELS 642, Ch. 120117A; 652,
Ch. 120032B; 653, Ch. 120080B

DWG. NO. 956009

FIG. 2 — SCHEMATIC DIAGRAM FOR MODELS 652 AND 653 USING CHASSIS 120032B AND 120080B



RES. IN OHMS
CAP. IN MFDS
UNLESS OTHERWISE NOTED*

PT. NO. 950042B

NOTE:
PINS 5 & 6 OF (V3-12AT6) ARE REVERSED FOR
CHASSIS 120080B. OTHERWISE SAME AS SHOWN.

DESCRIPTION

- TYPE: Single-band superheterodyne.
- FREQUENCY RANGE: 540-1620 kc.
- TYPE OF TUBES:
 - 1—12BE6, pentagrid oscillator-modulator
 - 1—12BA6, first i-f amplifier
 - 1—12AT6, diode detector, a-f amplifier, a.v.c.
 - 1—50B5, beam power output
 - 1—35W4, half-wave rectifier
- POWER SUPPLY: A.C. or D.C.
- VOLTAGE RATING: 105-125 volts.
- POWER CONSUMPTION: 30 watts.
- CURRENT DRAIN: 0.24 amp. at 117 volts a.c.

MODELS 642, Ch. 120117A; 652,
Ch. 120032B; 653, Ch. 120080B

CABINET AND DIAL PARTS LIST

DESCRIPTION	†PART NUMBER		
	Model 642	Model 652	Model 653
Cabinet (Bakelite)	140326	140346—Ebony 140353—Ivory	140345
Knobs	460151	460162S	460162S
Baffle and Grill Cloth	—	470609	470608
Back	575059	—	—
Baffle	—	575646	—
Handle (Black)	450000	—	—
Crystal	520034	—	—
Drive Pulley	531009	Pt. of 900072	Pt. of 900071
Drive Shaft	280024	280127	280126
Spring (Drive Cord)	587000	587040	587040
Dial Support Bracket (Right)	—	410907	—
Dial Support Bracket (Left)	—	410908	—
Dial Back Plate	520113	410909	410904
Pointer	525048	525054	525022-2
Loop and Back	—	700023 FH	700051
Loop	700033	—	—
Clip (Pointer)	541169	—	—
Bracket (Loop)	412481	410123	412481

†When Ordering Always Specify Part No.
*Prices Subject to Change Without Notice.

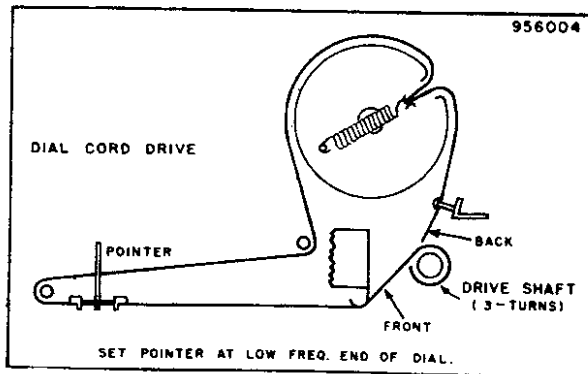
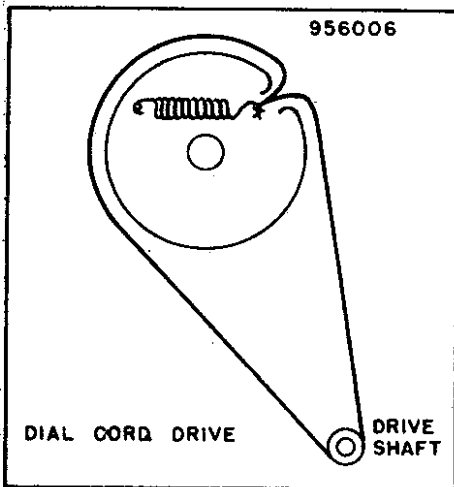
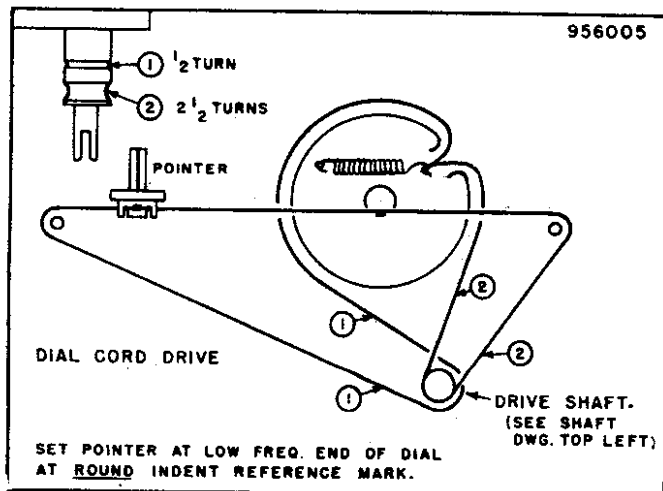


FIG. 5 — DIAL CORD DRIVE FOR CHASSIS 120080B



DIAL CORD DRIVE
FIG. 3 — FOR CHASSIS 120017B



DIAL CORD DRIVE
FIG. 4 — FOR CHASSIS 120032B

MODELS 642, Ch. 120117A; 652, Ch. 120032B; 653, Ch. 120080B

ALIGNMENT

To set pointer, turn variable condenser fully closed and set pointer at mark near left end of dial backplate. Use isolation transformer if available. If not, connect a 0.1 mfd. condenser in series with low side of signal generator and chassis. Volume control should be at maximum position; output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	METER OUTPUT	ADJUST	REMARKS
1	0.1 mfd.	High side to stator of rear section of tuning condenser. Low side to chassis.	455 kc	Variable condenser fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to 0.001 mfd. to reduce hum modulation.
2	200 mmfd.	High side to external antenna lead. Low side to external ground lead.	1620 kc	Variable condenser fully open.	Across voice coil.	A5	Adjust for maximum output.
3	200 mmfd.	High side to external antenna lead. Low side to external ground lead.	1400 kc	Tune for maximum output.	Across voice coil.	A6	Adjust for maximum output.

VOLTAGE READINGS FOR CHASSIS 120117A

Symbol	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7
V1	12BE6	-5.3 DC	0	11.2 AC	25 AC	90 DC	85 DC	-45 DC
V2	12BA6	-45 DC	0	25 AC	38 AC	90 DC	87 DC	1. DC
V3	12AT6	-0.6 DC	0	0	12 AC	-0.45 DC	-0.45 DC	45 DC
V4	50B5	0	5.5 DC	38 AC	85 AC	110 DC	85 DC	0
V5	35W4	0	0	85 AC	117 AC	110 AC	112 AC	120 DC

RESISTANCE READINGS FOR CHASSIS 120117A

Symbol	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7
V1	12BE6	2400	0.6	18	32	300,000	300,000	3 meg.
V2	12BA6	3 meg.	0	32	48	300,000	300,000	120
V3	12AT6	15 meg.	0	0	18	3 meg.	500,000	500,000
V4	50B5	400,000	150	48	80	300,000	300,000	400,000
V5	35W4	0	0	80	100	110	100	300,000

VOLTAGE READINGS FOR CHASSIS 120032B AND 120080B

Symbol	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7
V1	12BE6	-6.2 DC	0	24 AC	11.5 AC	85 DC	85 DC	-05 DC
V2	12BA6	0	0	24 AC	37 AC	85 DC	85 DC	1.4 DC
V3	12AT6	-4 DC	0	0	11.5 AC	*-02 DC	*-05 DC	50 DC
V4	50B5	0	5 DC	86 AC	37 AC	115 DC	85 DC	0
V5	35W4	0	0	86 AC	117 AC	110 AC	112 AC	120 DC

*12AT6, Pin 5 is -05 in Chassis 120080B

12AT6, Pin 6 is -02 in Chassis 120080B

RESISTANCE READINGS FOR CHASSIS 120032B AND 120080B

Symbol	TUBE	PIN 1	Pin 2	Pin 3	PIN 4	PIN 5	PIN 6	PIN 7
V1	12BE6	2400	0.6	25	13	300,000	300,000	3 meg.
V2	12BA6	20	0	25	38	300,000	300,000	120
V3	12AT6	15	0	0	13	*500,000	*3.5	700,000
V4	50B5	400,000	150	75	38	300,000	300,000	400,000
V5	35W4	Inf.	Inf.	75	100	110	95	300,000

*12AT6, Pin 5 is 3.5 in Chassis 120080B

12AT6, Pin 6 is 500,000 in Chassis 120080B

VOLTAGE AND RESISTANCE READING INSTRUCTIONS

1. Voltage readings are in volts and resistance readings in ohms unless otherwise specified.
2. D-C voltage measurements are at 20,000 ohms per volt; a-c voltage measured at 1,000 ohms per volt.
3. Socket connections are shown as bottom views.
4. Measured values are from socket pin to common negative.
5. Line voltage maintained at 117 volts for voltage readings.
6. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
7. Volume control at maximum, no signal applied for voltage measurements.

MODELS 642, Ch. 120117A; 652,
Ch. 120032B; 653, Ch. 120080B

REPLACEMENT PARTS LIST FOR CHASSIS 120117A

Schematic Symbol	†Part No.		DESCRIPTION	Schematic Symbol	†Part No.		DESCRIPTION
	Model 642	Chassis 120117A			Model 642	Chassis 120117A	
R1, 4	351490		Resistor—15 meg., ½ w., 20%	T1, T2	720021		1st and 2nd I. F. transformer
R2	Part of 716051		Resistor—22,000 ohms, ½ w., ±10%	T3	734057		Output transformer
R3	340270		Resistor—120 ohm, ½ w., ±10%	L2	716051		Oscillator coil
R5, 6	351130		Resistor—470 k ohm, ½ w., ±20%	V1	800525		12BE6—Converter
R7	340290		Resistor—150 ohm, ½ w., ±10%	V2	800524		12BA6—I. F. amplifier
R8	380530		Resistor—1500 ohm, 1 w., ±20%	V3	800523		12AT6—Detector—A. V. C. and A. F. amplifier
R9	340070		Resistor—18 ohm, ½ w., ±10%	V4	800527		50B5—Audio output
R10	390015		Volume control	V5	800526		35W4—Rectifier
R11	351330		Resistor—3.3 meg., ½ w., 20%	V6	807000		Pilot light
C1	920060		Capacitor—paper—.05 mfd., 200 v.		530050		Drive cord (12") approx.
C2, 3, 4, 5	470310		Capacitor assembly		583029		Line Cord
C6	920020		Capacitor—.02 mfd., 400 v.		507090		Dial light socket
C7	920030		Capacitor—.05 mfd., 400 v.		180045		Speaker
C8	925000		Capacitor—electrolytic—30-50 mfd., 150 v.				
C9A, C9B	900052		Variable capacitor				

†When Ordering Always Specify Part No.

REPLACEMENT PARTS LIST FOR CHASSIS 120032B AND 120080B

Schematic Symbol	†Part No.		DESCRIPTION
	Model 652 Chassis 120032B	Model 653 Chassis 120080B	
R1	351330	351330	Resistor—3.3 meg., ½ w., ±20%
R2	Part of L2	Part of L2	Resistor—22,000 ohms, ½ w., 10%
R3	340270	340270	Resistor—120 ohms, ½ w., ±10%
R4	351490	351490	Resistor—15 meg., ½ w., 20%
R5, 6	351130	351130	Resistor—470 k ohm, ½ w., ±20%
R7	340290	340290	Resistor—150 ohm, ½ w., ±10%
R8	380530	380530	Resistor—1500 ohm, 1 w., ±20%
R9	340070	340070	Resistor—18 ohm, ½ w., ±10%
R10	390146	390145	.5 meg volume control
C1	920060	920040	.05 mfd., 200 v.
C2	910000		220 mmf., mica, type "O"
C3	910000		220 mmf., mica, type "O"
C4	920515		.002 mfd., 400 v., paper
C5	920180		.005 mfd., 400 v., paper
C2, 3, 4, 5	470310	470310	Herlac coupling assembly
C6	920020	920540	.02 mfd., 400 v., paper
C7	920030	920539	.05 mfd., 400 v., paper
C8	925175	925000	30-50 mfd., 150 v., electrolytic
C-9A, B	900072	900071	Variable capacitor
C10, 11	Pt. of C9A, B	Pt. of C9A, B	Trimmers
C12	920040	920040	.1 mfd., 200 v.
T1, T2	720021	720021	1st and 2nd I. F. transformer
T3		734057	Output transformer
L1	700023FH	700051	Ant. loop and back
L2	716026-1	716026-2	Oscillator coil
SP-1	180071	180045	Speaker
SW-1	Pt. of R10	Pt. of R10	On-off switch
V1	800525	800525	12BE6—Mixer
V2	800524	800524	12BA6—I. F. amplifier
V3	800523	800523	12AT6—Detector—1st A. F. amplifier
V4	800527	800527	50B5—Audio output
V5	800526	800526	35W4—Rectifier
V6	807000	807000	Pilot light—15 amp., # 47
	530002	530002	Drive cord (30") approx.
	507005	507220	Drive cord (27") approx.
	583030	583032	Dial light socket
			Line cord