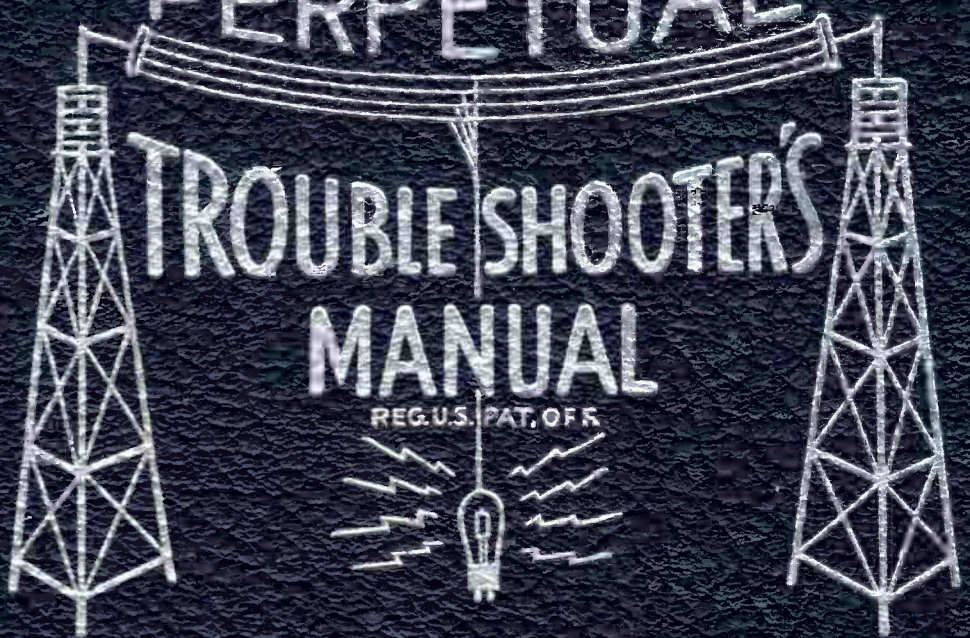
VOLUME XVIII

PERPETUAL TROUBLE SHOOTER'S MANUAL



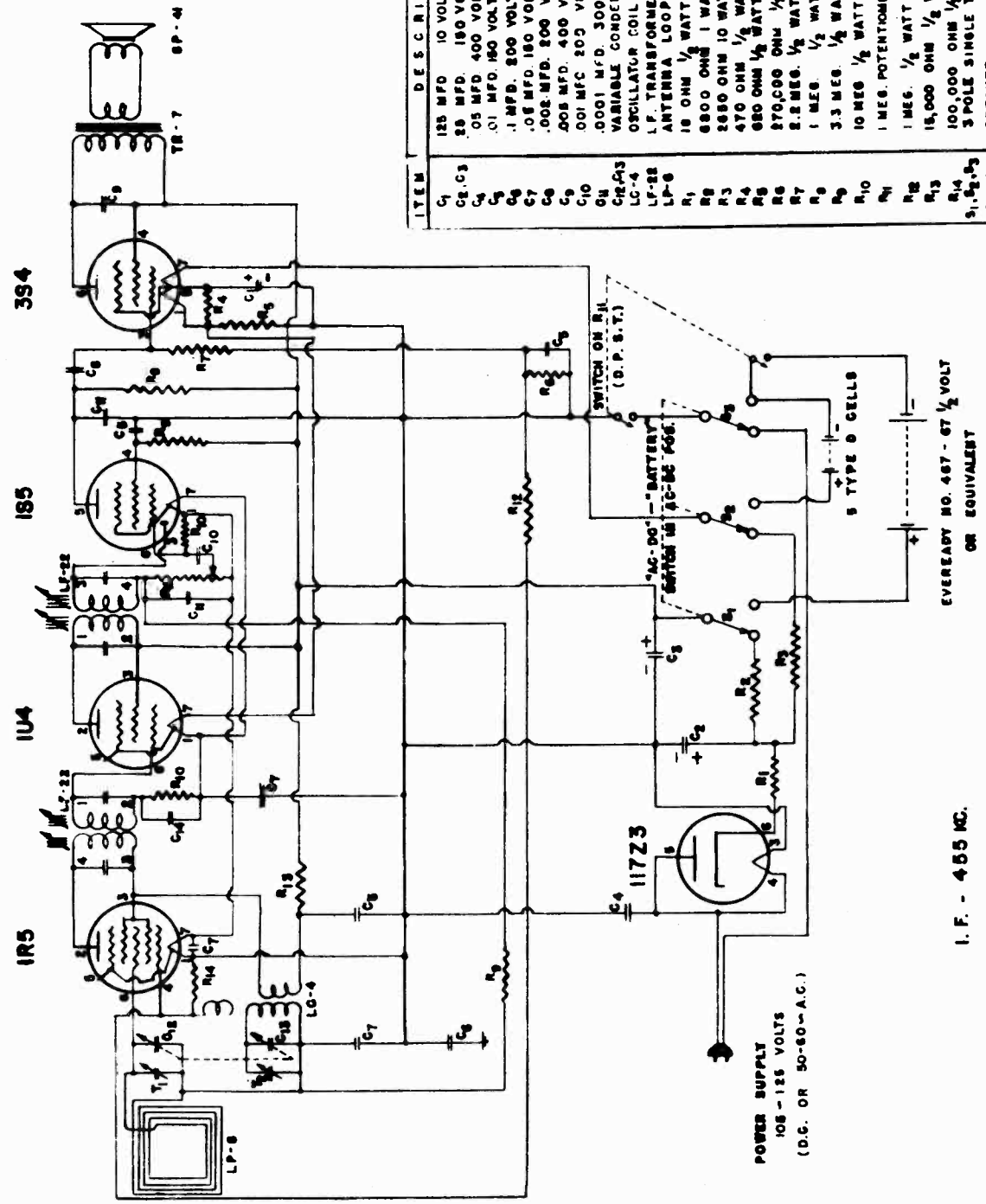
REG. U.S. PAT. OFF.

JOHN F. RIDER

WALGREEN CO.

MODEL 407,
3 way portable

ITEM	DESCRIPTION	PART NUMBER
	CE-12	
C_1	125 MFD 10 VOLT ELECTROLYTIC	CP 503-5
C_2, C_3	25 MFD. 150 VOLT CONDENSER	CP 103-2
C_4	.05 MFD 400 VOLT PAPER COND.	CP 104-2
C_5	.01 MFD. 150 VOLT PAPER COND.	CP 503-2
C_6	.1 MFD. 200 VOLT PAPER COMB.	CP 502-3
C_7	.05 MFD. 150 VOLT PAPER COND.	CP 502-2
C_8	.002 MFD. 200 VOLT PAPER COMB.	CP 102-3
C_9	.005 MFD. 400 VOLT PAPER COND.	CM 101-1
C_{10}	.001 MFC 203 VOLT PAPER COND.	CV 10
C_{11}	.0001 MFD. 300 VOLT MICA COND.	LC-4
C_{12}, C_{13}	VARIABLE CONDENSER	LF-22
LC-4	OSCILLATOR COIL	LP-6
LF-22	I.F. TRANSFORMER	RC 180-1
LP-6	ANTENNA LOOP	RC 682-6
R_1	18 OHM ½ WATT RESISTOR	RP - 3
R_2	6800 OHM 1 WATT 10% RESISTOR	RC 471-1
R_3	2650 OHM 10 WATT 5% RESISTOR	RC 821-2
R_4	470 OHM ½ WATT RESISTOR	RC 274-2
R_5	680 OHM ½ WATT 10% RESISTOR	RC 225-1
R_6	270,000 OHM ½ WATT 10% RESISTOR	RC 109-1
R_7	2.2 MEG. ½ WATT RESISTOR	RC 335-1
R_8	1 MEG. ½ WATT RESISTOR	RC 106-1
R_9	3.3 MEG. ½ WATT RESISTOR	VC - 6
R_{10}	10 MEG ½ WATT RESISTOR	RC 105-2
R_{11}	1 MEG. POTENTIOMETER WITH SWITCH	RC 183-1
R_{12}	1 MEG. ½ WATT 10% RESISTOR	RC 104-2
R_{13}	15,000 OHM ½ WATT RESISTOR	SW - 10
R_{14}	100,000 OHM ½ WATT RESISTOR 10%	SP - 41
S_1, S_2, S_3	3 POLE SINGLE THROW SWITCH	TR - 7
SP - 41	SPEAKER	CP 103-4
TR - 7	OUTPUT TRANSFORMER	
T_1, T_2	TRIMMERS ON VARIABLE	
C_{14}	01 MFD. 100 VOLT PAPER COMB.	

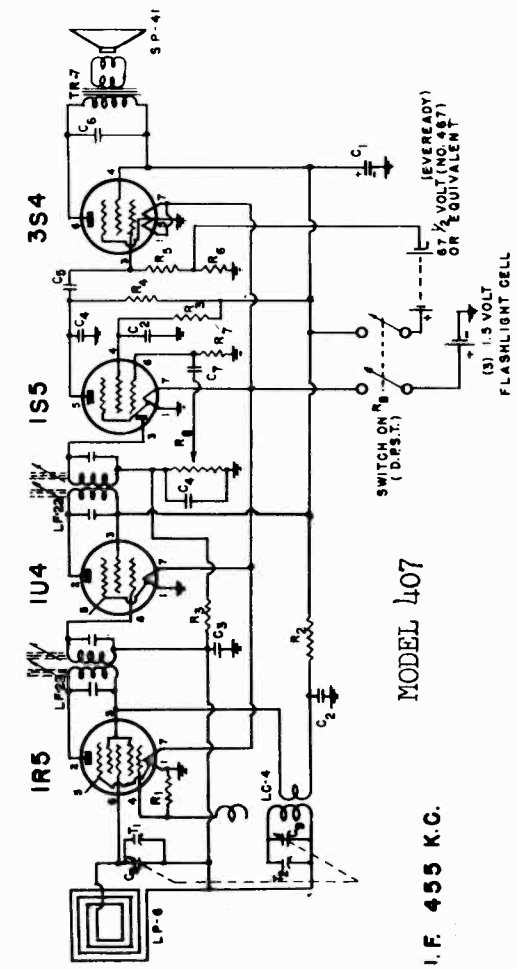


MODEL 407, 4 Tube Portable
MODEL 418

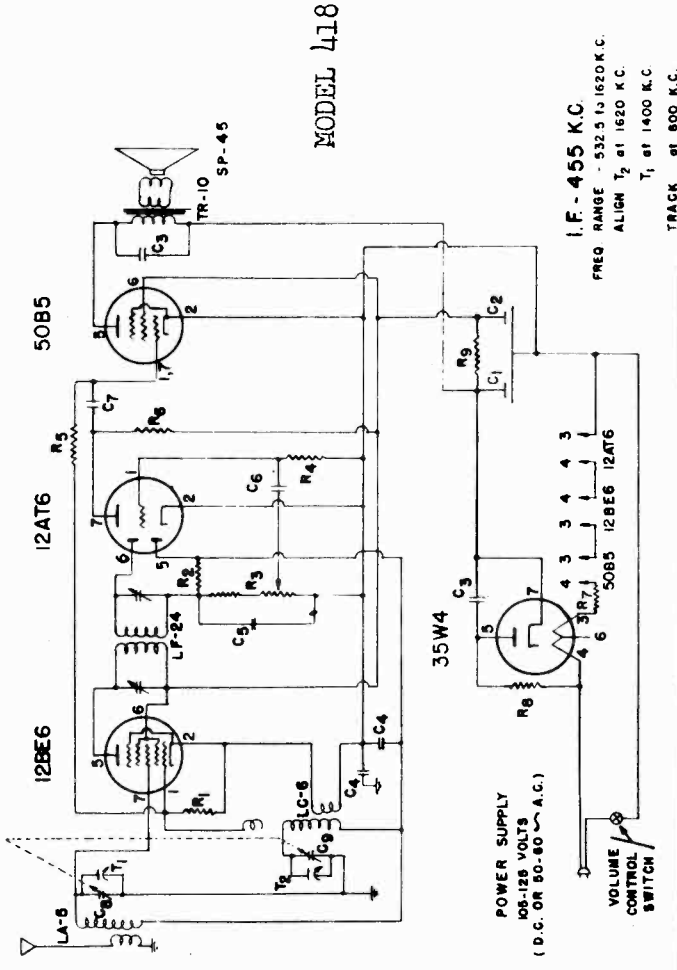
WALGREEN CO.

ITEM	DESCRIPTION	PART NO.
C_1	16 MFD. 100 VOLT ELECTROLYTIC	CE-14
C_2	.01 MFD. 200 VOLT PAPER COND.	CP-103-3
C_3	.05 MFD. 200 VOLT PAPER COND.	CP-503-4
C_4	.0001 MFD. 500 VOLT MICA COND.	CM-101-2
C_5	.002 MFD. 200 VOLT PAPER COND.	CP-202-2
C_6	.005 MFD. 400 VOLT PAPER COND.	CP-502-1
C_7	.001 MFD. 200 VOLT PAPER COND.	CP-102-3
LC-4	OSCILLATOR COIL	LC-4
LF-22	I.F. TRANSFORMER	LF-22
LP-6	ANTENNA LOOP	LP-6
R_1	100,000 OHM ½ WATT RESISTOR	RC-104-1
R_2	15,000 OHM ½ WATT RESISTOR	RC-153-1
R_3	3.3 MEG. ½ WATT RESISTOR	RC-335-1
R_4	1 MEG. ½ WATT RESISTOR	RC-105-1
R_5	2.2 MEG. ½ WATT RESISTOR	RC-225-1
R_6	820 OHM ½ WATT RESISTOR 10%	RC-821-2
R_7	10 MEG. ½ WATT RESISTOR	RC-106-1
SP-41	SPEAKER	SP-41
R_8	1 MEG. POTENTIOMETER WITH SWITCH	VC-6
TR-7	OUTPUT TRANSFORMER	TR-7
C8,C9	VARIABLE CONDENSER	CV-10
T1,T2	TRIMMERS ON VARIABLE	

FREQ. RANGE - 530-1700 K.C.
ALIGN T_2 - 1700 K.C.
T_1 - 1500 K.C.
TRACK AT - 600 K.C.

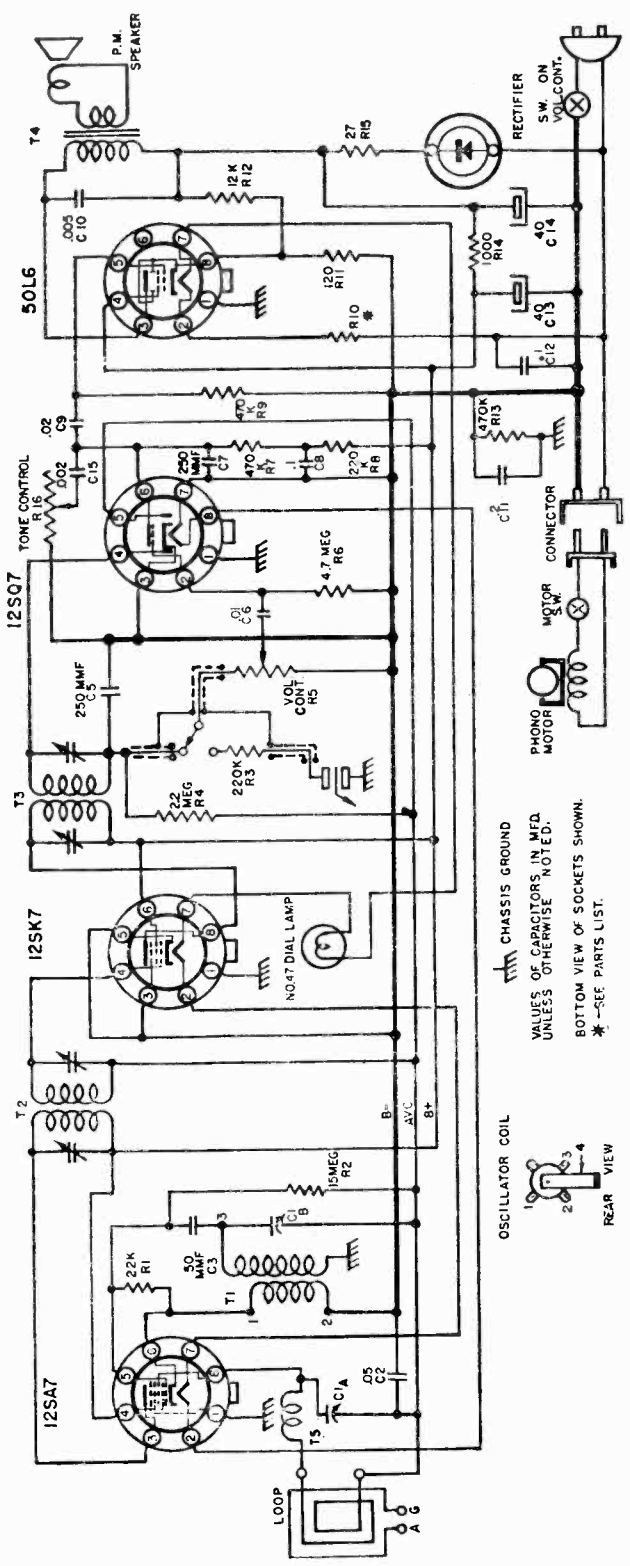


ITEM	DESCRIPTION	PART NO.
C_1,C_2	2 X 40 MFD. 150 VOLT ELECT.	CE-15
C_3	.02 MFD. 400 V. PAPER COND.	CP-203-1
C_4	.05 MFD. 200 V. PAPER COND.	CP-503-4
C_5	.00018 MFD. 500 V. MICA COND.	CM-181-1
C_6	.002 MFD. 400 V. PAPER COND.	CP-202-2
C_7	.005 MFD. 200 V. PAPER COND.	CP-502-3
C_8,C_9	VARIABLE CONDENSER	CV-14
LC-6	OSCILLATOR COIL	LC-6
LA-5	ANTENNA COIL	LA-5
LF-24	I.F. TRANSFORMER	LF-24
R_1	18,000 OHMS ½ W. 10%	RC-183-2
R_2	4.7 MEGOHMS ½ W. RESISTOR	RC-475-1
R_3	2 MEG. VOL. CONTROL, 100K STOP	VC-11
R_4	10 MEGOHMS ½ W RESISTOR	RC-106-1
R_5	330,000 OHMS ½ WATT	RC-334-1
R_6	220,000 OHMS ½ WATT	RC-224-1
R_7	39 OHMS 1 WATT RESISTOR	RC-390-4
R_8	18 OHMS ½ W. RESISTOR	RC-180-1
R_9	2200 OHMS 1 W. RESISTOR	RC-222-4
T_1,T_2	TRIMMERS	
SP-45	SPEAKER	SP-45
TR-10	OUTPUT TRANSFORMER	TR-10



WARWICK MFG. CORP.

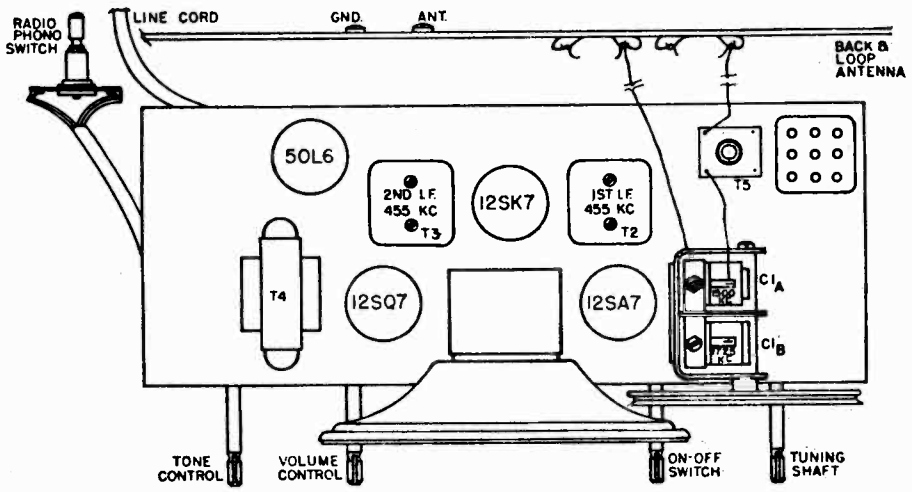
MODEL 12708



PARTS LIST

Code	Part No.	DESCRIPTION	CODE	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C1A, C1B	B19-193	Variable Condenser	R5	A24-169	500K Ohm Volume Control with Switch	A52-211	Knob, Phono-Radio
C2	A16-152	.05 MFD. 200 Volt Condenser	R6	A60-669	4.7 Megohm ½ Watt 20% Resistor	A52-203	Knob, Tuning
C3	A15-175	50 MMFD. Mica Condenser	R7, R9, R13			A52-208	Knob, Volume
C9	A16-150	.02 MFD. 400 Volt Condenser	R8	A60-662	470K Ohm ½ Watt 20% Resistor	A52-209	Knob, On-Off
C5, C7	A15-176	250 MMFD. Mica Condenser	R10	A60-719	Special Compensating Resistor, order only from the manufacturer	A52-207	Knob, Tone
C6	A16-156	.01 MFD. 400 Volt Condenser	R11	A60-702	120 Ohm ½ Watt 10% Resistor	A69-172	Switch, Phono-Radio
C8	A16-157	.1 MFD. 200 Volt Condenser	R12	A60-720	12K Ohm 2 Watt 10% Resistor	A39-277	Drum for Variable Condenser
C10	A16-153	.005 MFD. 600 Volt Condenser	R14	A60-699	1000 Ohm 2 Watt 10% Resistor	B79-356	6¼" P.M. Speaker
C11	A16-154	.2 MFD. 400 Volt Condenser	R15	A60-721	27 Ohm 1 Watt 10% Resistor	A83-391	Selenium Rectifier
C12	A16-160	.1 MFD. 400 Volt Condenser	R16	A26-123	Tone Control, 2 Megohm	A84-41	Tuning Shaft and Pulley
C13, C14	A18-280	40 MFD. 150 Volt Electrolytic Condenser	T1	B10-411	Oscillator Coil	A83-308	Connector
C15	A16-155	.002 MFD. 600 Volt Condenser	T2	B10-453	1st I. F. Transformer	A71-30	Cover, Dial Plate Assembly
R1	A60-659	22K Ohm ½ Watt 20% Resistor	T3	B10-454	2nd I. F. Transformer	C67-502	Dial Scale
R2	A60-664	15 Megohm ½ Watt 20% Resistor	T4	B80-236	Output Transformer	A58-54	Dial Pointer
R3, R8	A60-667	220K Ohm ½ Watt 20% Resistor	T5	A10-503	Loading Coil	A83-429	Retainer, Dial Scale
R4	A60-684	2.2 Megohm ½ Watt 20% Resistor				C82-50	Loop Antenna
						B83-290	Dial Diffusing Plate
						A69-169	On-Off Switch

MODEL 12708 WARWICK MFG. CORP.



ALIGNMENT PROCEDURE

The following alignment procedure is for use only by competent servicemen having the proper equipment.

The alignment should be made with volume control fully on, and the output from the signal generator as low as possible, to prevent A.V.C. action from interfering with correct alignment.

With the output meter connected across the voice coil of the speaker, the output meter reading for 50 milliwatts is .4 volts using a signal which is modulated 400 c.p.s.

Adjust all trimmers for maximum output. Repeat alignment procedure given below as a final check.

Postion of Variable	Generator Frequency	Dummy Ant. Mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully open	455 KC	.1	* 12SA7 Grid (Stator of C1A)	T2	Input I.F.
Fully open	455 KC	.1	* 12SA7 Grid (Stator of C1A)	T3	Output I.F.
Fully open	1725 KC	.00025	* 12SA7 Grid (Stator of C1A)	C1B	Oscillator
Tune in signal from generator	1500 KC	.00025	**Loosely Coupled to Loop	C1A	Antenna

*Connect ground lead of signal generator to Common "B."

**Do not correct ground lead of signal generator.

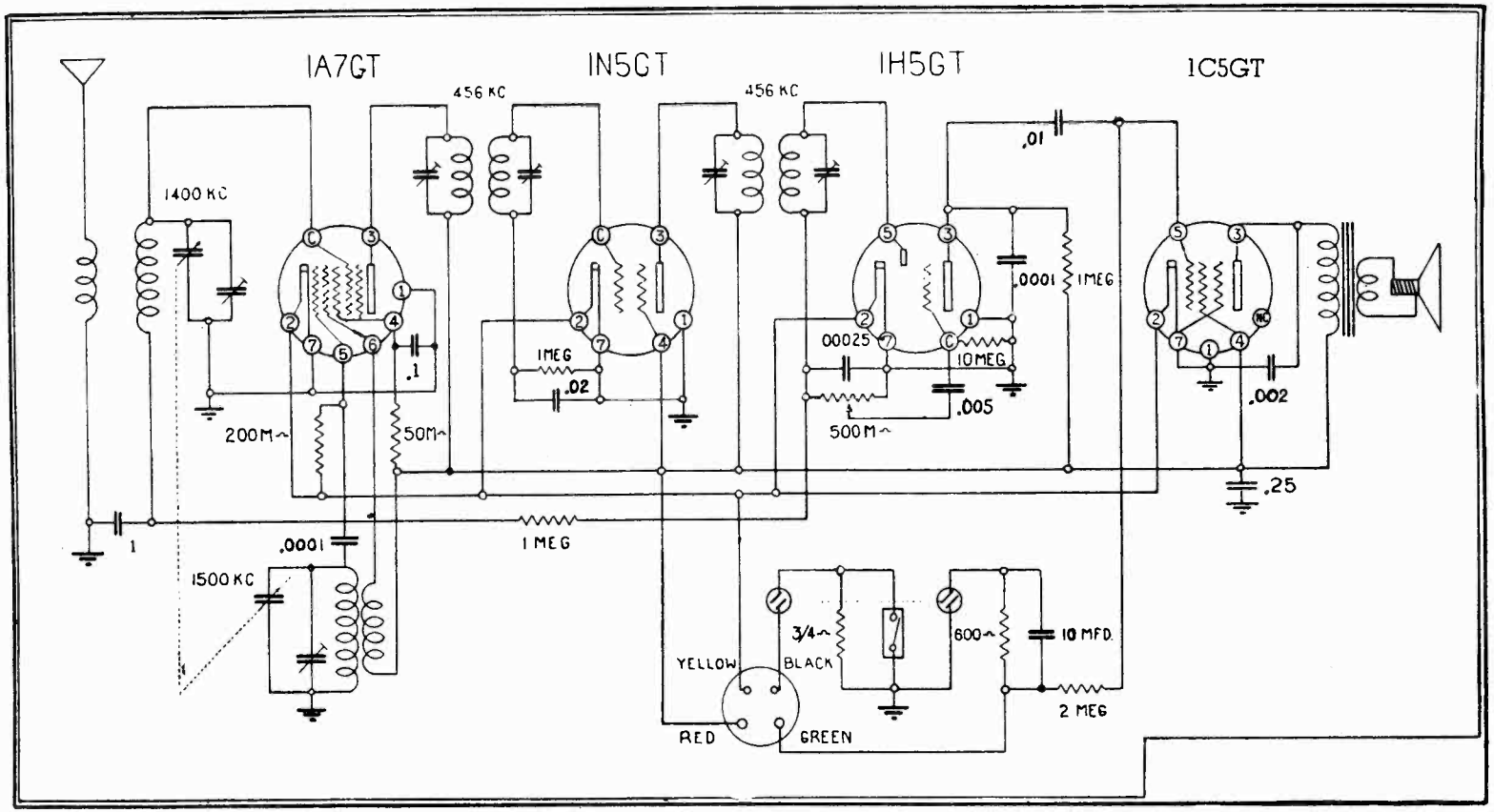
DESCRIPTION

Model 12708 is a superhetrodyne radio receiver and phonograph combination designed for operation on a 117 volt 60 cycle A.C. power supply.

The tubes used are:—
12SA7—Mixer, Oscillator
12SK7—I. F. Amplifier
12SQ7—Det., AVC, Audio
50L6—Power Output
A83-391—Selenium Rectifier

This receiver covers the frequency range from 535 kilocycles to 1725 kilocycles (K.C.).

The record player used is the automatic type, capable of playing up to twelve 10 inch or ten 12 inch records automatically.

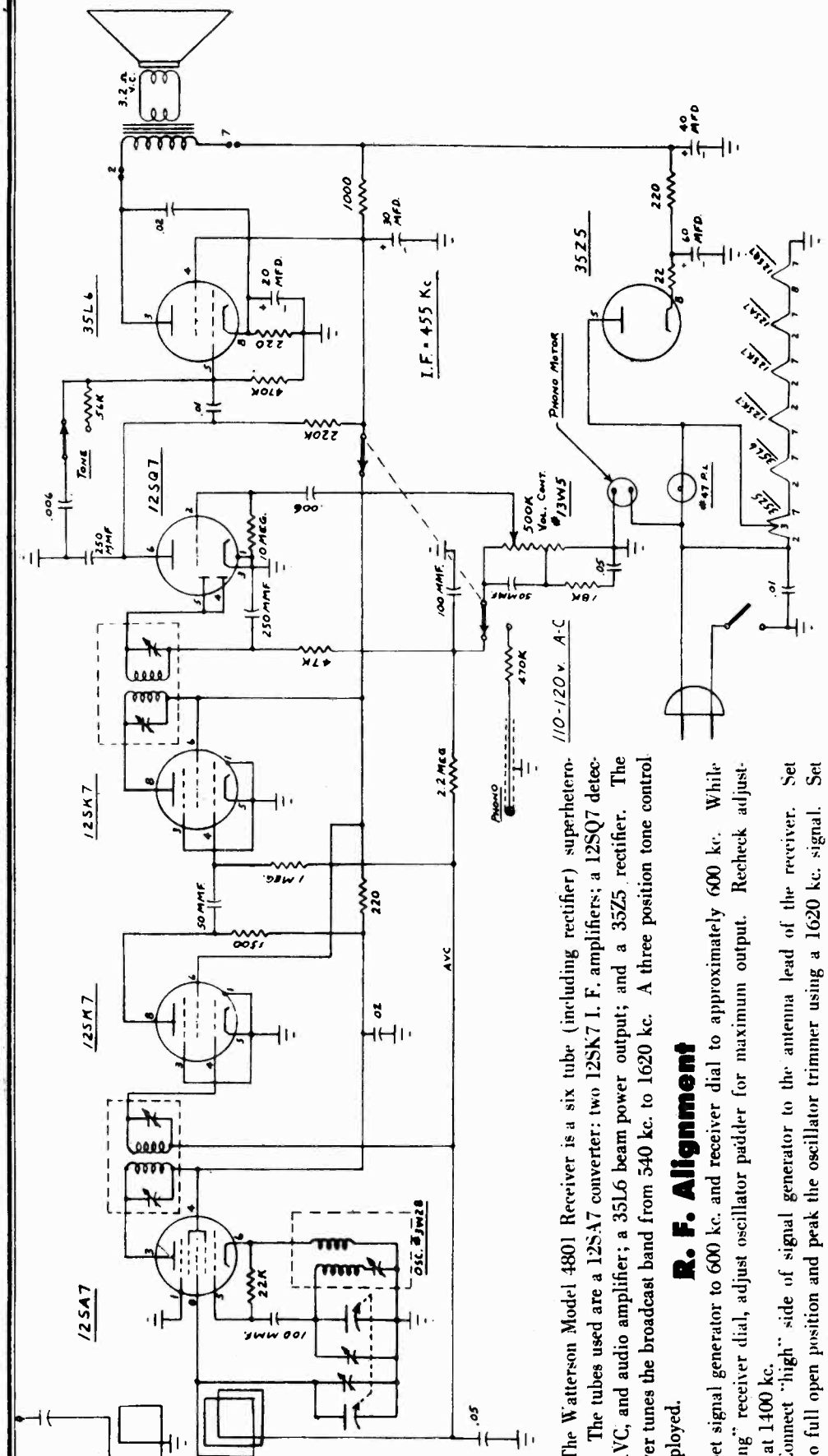


ALIGNMENT PROCEEDURE

I. F. ALIGNMENT: Turn volume control to **FULL ON**, connect signal generator to grid of the 1A7 tube through a .25 condenser. Connect ground of the signal generator to the ground lead of the receiver, set dial at 1000 K. C. and feed in a 456 K. C. signal and adjust first and second I. F. to maximum, then recheck first I. F.

R. F. ALIGNMENT: Turn dial to high frequency end, feed in a 1500 K. C. Signal to the receiver antenna lead through a .00025 mica condenser, adjust the 1500 K. C. oscillator trimmer until the maximum output is shown. Now, set generator at 1400 K. C. and tune in this signal on the receiver, then adjust the antenna trimmer to maximum output. This completes the alignment.

MODEL 4801 WATTERSON RADIO MFG. CORP.



The Watterson Model 4801 Receiver is a six tube (including rectifier) superheterodyne. The tubes used are a 12SA7 converter; two 12SK7 I. F. amplifiers; a 12SQ7 detector, AVC, and audio amplifier; a 35L6 beam power output; and a 35Z5 rectifier. The receiver tunes the broadcast band from 540 kc. to 1620 kc. A three position tone control is employed.

R. F. Alignment

Set signal generator to 600 kc. and receiver dial to approximately 600 kc. While "rocking" receiver dial, adjust oscillator padder for maximum output. Recheck adjustments at 1400 kc.

Connect "high" side of signal generator to the antenna lead of the receiver. Set gang to full open position and peak the oscillator trimmer using a 1620 kc. signal. Set the signal generator to 1400 kc., and tune receiver for maximum output. Now peak the antenna trimmer.

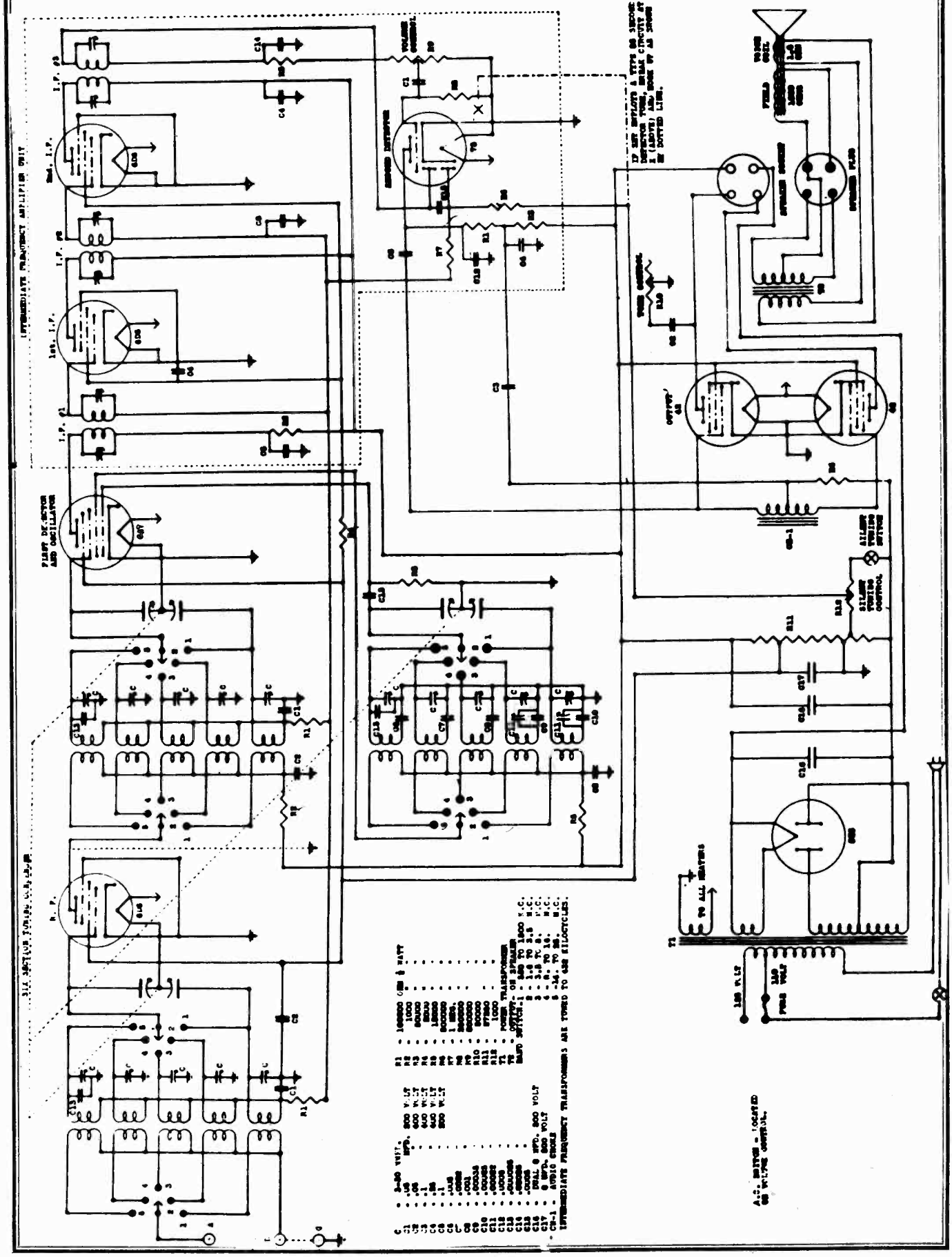
I. F. Alignment

Connect the low side of an accurately calibrated signal generator through a .1 mfd. condenser to the chassis of the receiver and the "high" side of the generator through a .1 mfd. condenser to the R. F. grid (pin 8) of the 12SA7 converter tube. Set the signal generator to 455 Kc. with just enough signal to be audible in the speaker with the receiver volume control full on. If possible, an output meter should be used.

Adjust the second I. F. transformer and then the first I. F. transformer for maximum output. Recheck all adjustments.

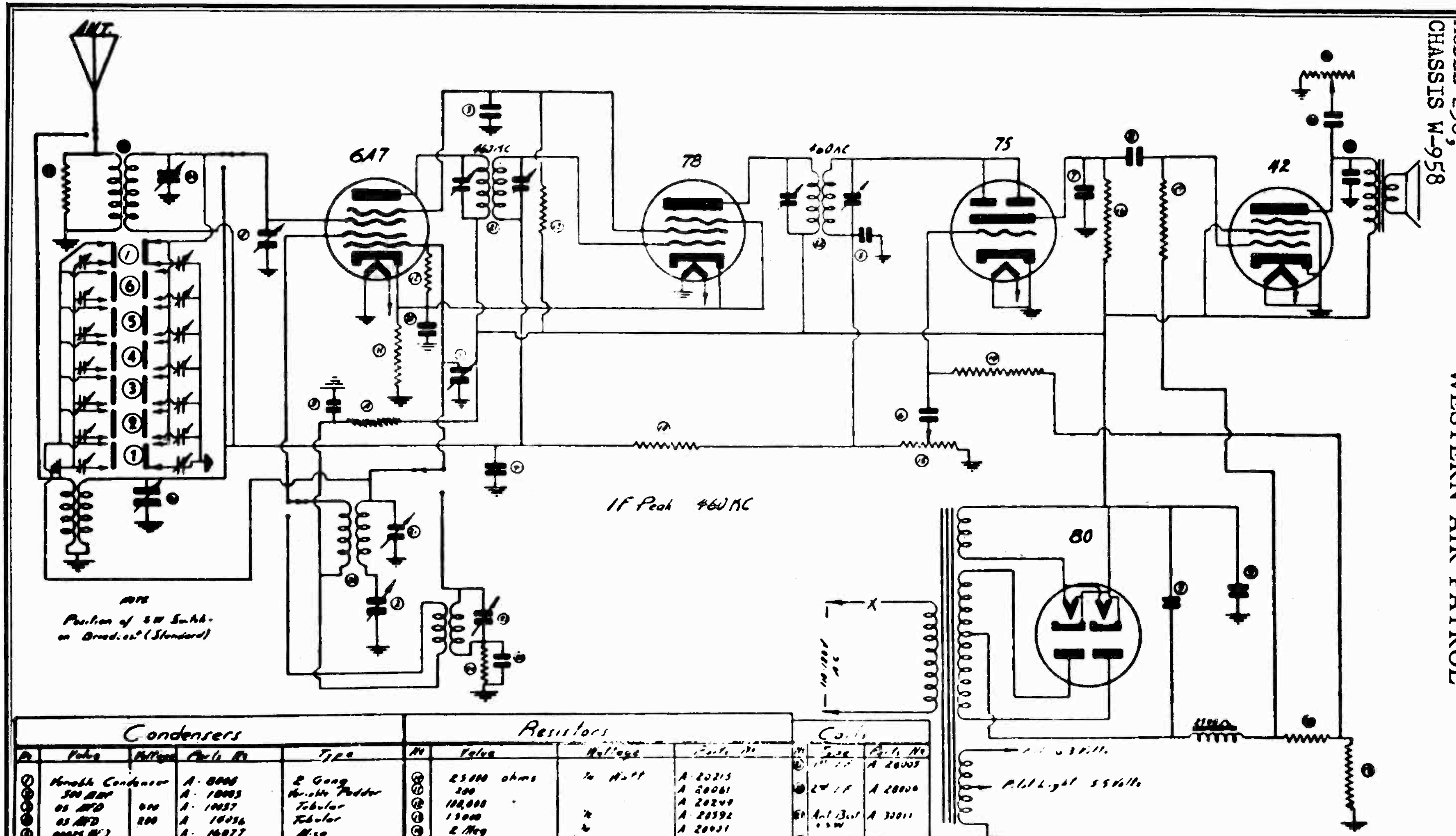
WESTERN AIR PATROL

MODEL 185 AW,
CHASSIS W-411



MODEL 258,
CHASSIS W-958

WESTERN AIR PATROL



Condensers

No	Value	Voltage	Parts No	Type
[illegible]	Variable Condenser		A-8006	2 Gang
[illegible]	500 MMF		A-10003	Variable Padder
[illegible]	.05 MFD	400	A-10057	Tubular
[illegible]	.05 MFD	200	A-10056	Tubular
[illegible]	.00025 MFD		A-16077	Mica
[illegible]	.01 MFD	400	A-14026	Tubular
[illegible]	.001 MFD	600	A-10078	Tubular
[illegible]	.01 MFD	600	A-14028	Tubular
[illegible]	8+8 MFD	450	A-10005	Electrolytic Cond
[illegible]	1 MFD	200	A-14001	Tubular
[illegible]	3-30 MMF	—		Trimmer-SW
[illegible]	.006 MFD	600	A-14113	Tubular
[illegible]	.02 MFD	400	A-14039	Tubular

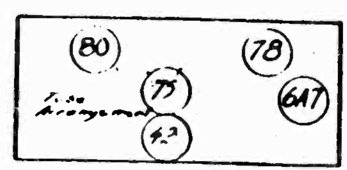
KC [illegible]

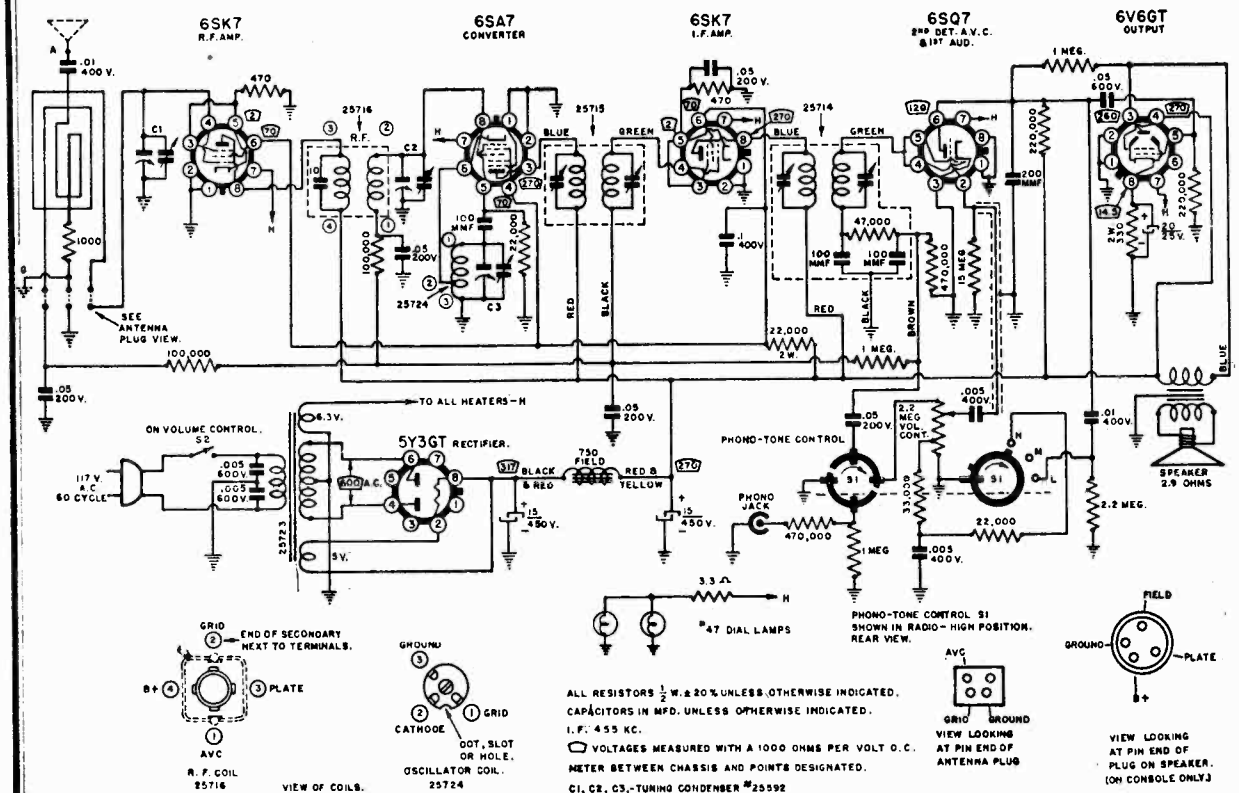
Resistors

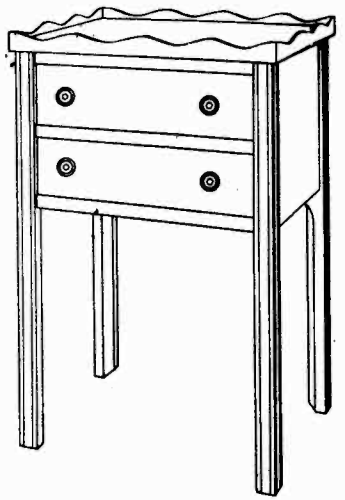
No	Value	Wattage	Parts No
[illegible]	25,000 ohms	½ Watt	A-20215
[illegible]	200		A-20061
[illegible]	100,000 "		A-20249
[illegible]	15000	½	A-20392
[illegible]	2 Meg	½	A-20031
[illegible]	500,000 "	Volume Control	A-33005
[illegible]	250,000	½ Watt	A-20336
[illegible]	1 Meg		A-20300
[illegible]	350 "		A-20479
[illegible]	30 "	Insulated	A-20012
[illegible]	30,000 "	½ Watt	A-20229
[illegible]	50,000 "	Tone Control	A-14002

Coils

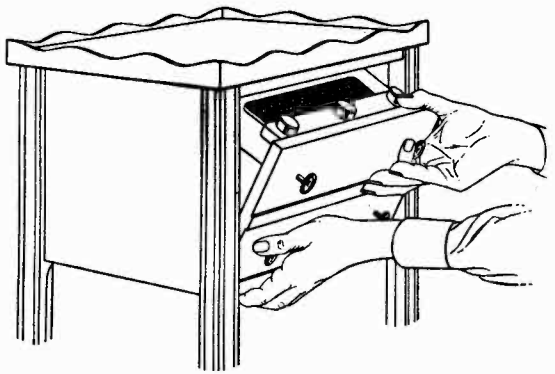
No	Type	Parts No
[illegible]	1st I.F.	A-28005
[illegible]	2nd I.F.	A-28000
[illegible]	Ant. Coil S.W.	A-33011
[illegible]	Oscillator S.W.	A-30012







DIAL SCALE REPLACEMENT—Remove chassis. Remove pointer track by removing the two wood screws holding it to the cabinet. Dial scale may now be lifted out from front of cabinet. When installing new scale —see that long screws in track bracket engage the notches in the ends of the scale.



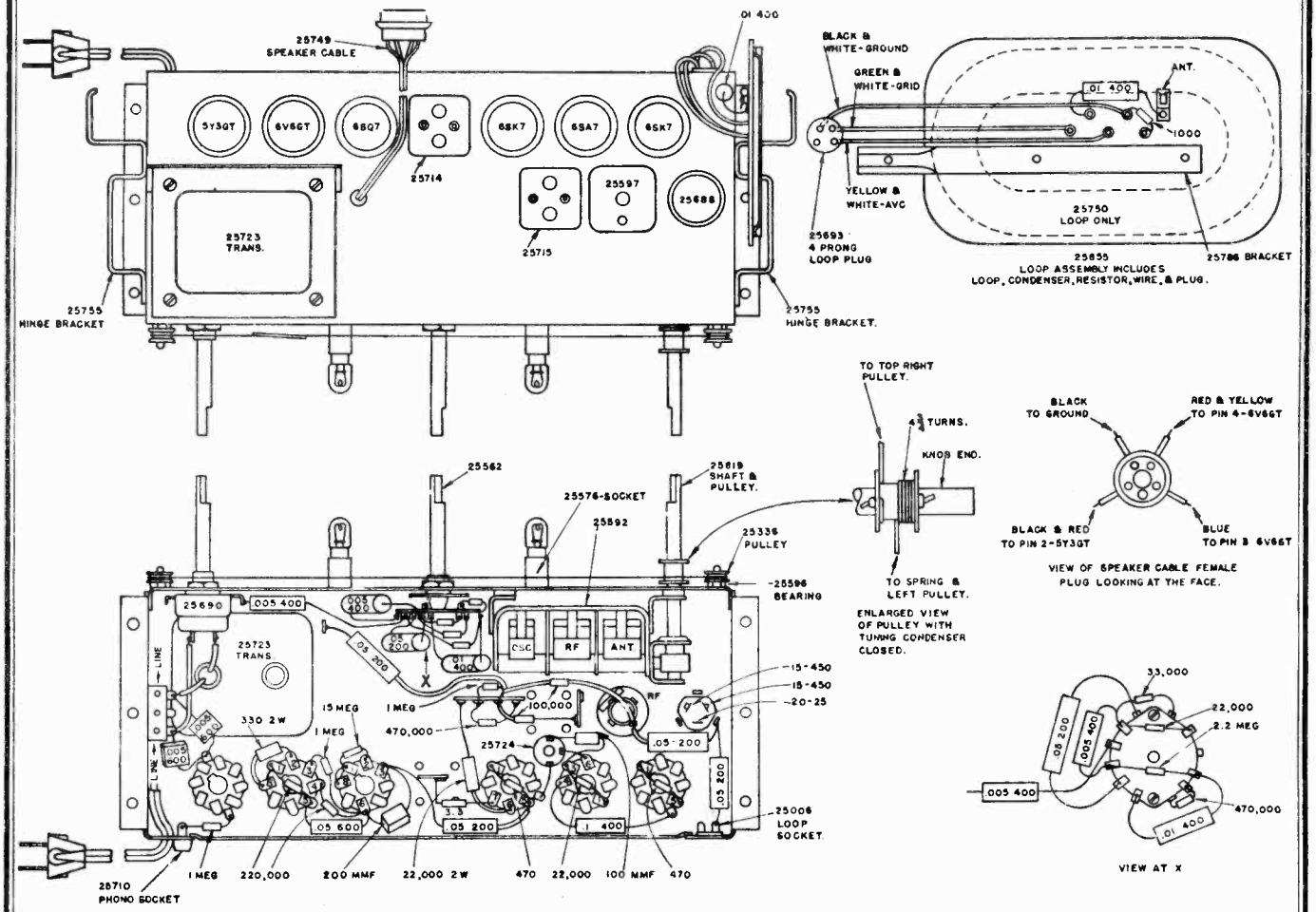
Part No.	Description
25750	Antenna—Loop—Consolette Model
25596	Bearings—For Wood Pulleys
25572	Bracket—Tuning Condenser—Front
25573	Bracket—Tuning Condenser—Rear
25755	Bracket—Hinge
25765	Bracket—Pointer Track
25728	Cabinet
25597	Coil—R. F.
25724	Coil—Oscillator
25688	Condenser—Filter 15-450, 15-450, 20-25
25592	Condenser—Tuning C-1, C-2, C-3
25690	Control—Volume (with AC Switch S-2)
25068	Cord—AC and Plug
25834	Cord—Dial (includes Spring and Pointer Coupling)
25779	Dial Scale—Glass
25578	Dial Pointer
25829	Knob—Tone
25696	Knob—Volume and Tuning
25710	Phono—Pick-Up Socket
25693	Plug—For Loop

Part No.	Description
25336	Pulley—Wood—Small
25819	Pulley—Manual Drive With Shaft
25607	Rubber—Grommets
25774	Screw—Set For Worm Gear (Tuning Condenser)
25576	Socket—Dial Lamp
25620	Socket—Octal
25006	Socket—For Loop
25754	Speaker—With Transformer
25562	Switch—Tone S-1,
25711	Track—Pointer
25715	Transformer—I. F. Input
25714	Transformer—I. F. Output
25713	Transformer—Output—Speaker
25723	Transformer—Power 60 Cycles

Note: Resistors and condensers not listed will be supplied on order—specify value.

MODEL D1612

WESTERN AUTO SUPPLY CO.



Generator to antenna clip through a .0001 Mfd. condenser. Adjust oscillator trimmer condenser (located on left top) to 1620 KC with tuning condenser at minimum capacity (complete out of mesh). The antenna and R. F. sections are trimmed at 1400 KC. Antenna trimmer is top right; R. F. trimmer is below at right. Dial pointer may be adjusted to scale by slipping pointer coupling on dial cord.

DIAL CORD REPLACEMENT—Is best accomplished by replacing complete cord assembly No. 25834 which is made up to correct length. In an emergency 30 lb. fish line may be used. See picture of chassis for correct installation.

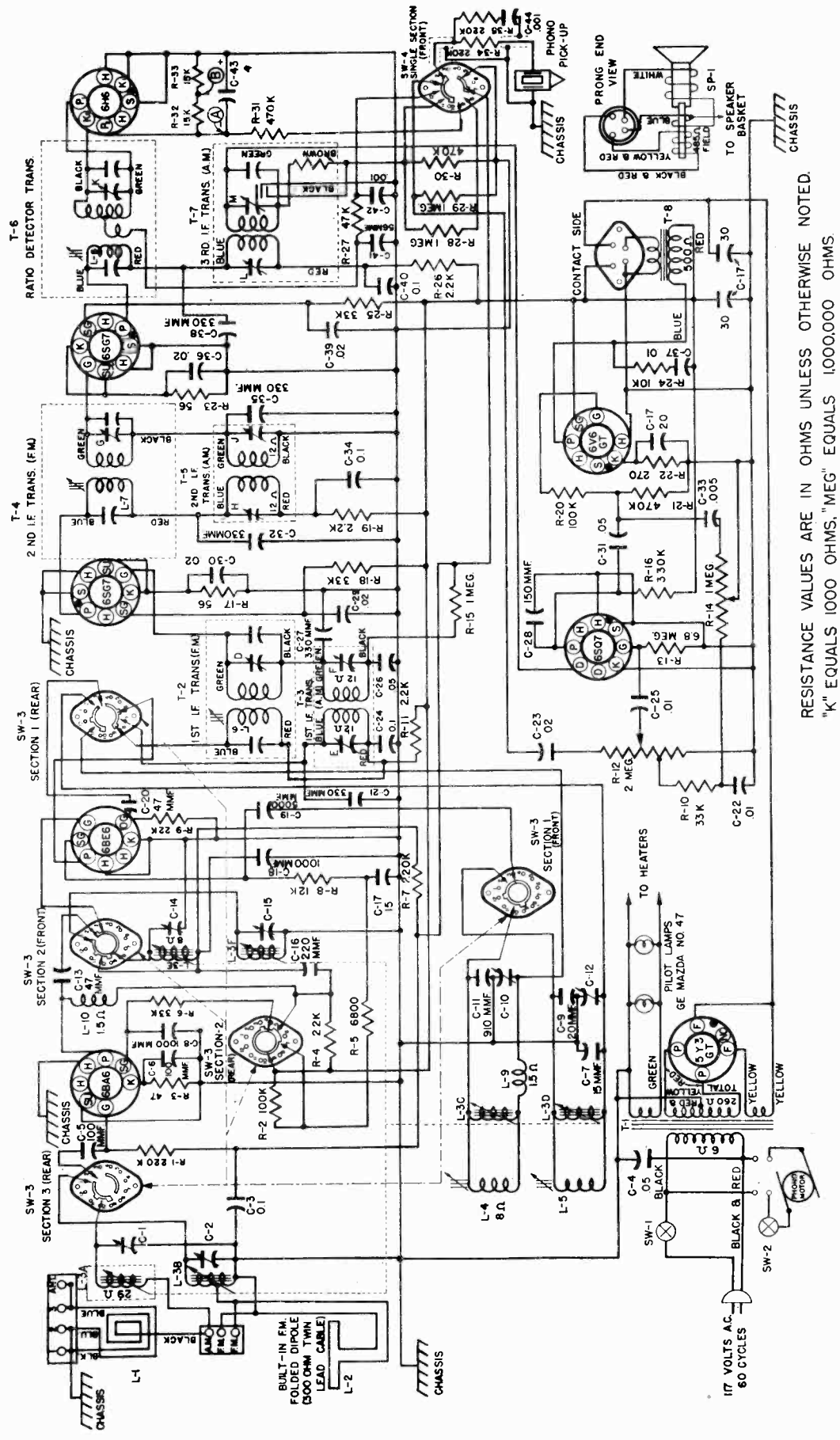
INSTALLING CHASSIS AND FRONT ASSEMBLY IN CABINET—Just reverse the procedure given above for removal of chassis—connect speaker socket, carefully place set in position shown in the picture, and it will then drop down on the hinge pins and be ready to operate in normal manner.

ALIGNMENT—Sets are properly aligned at the factory with precision equipment and the adjustments should not be disturbed unless a coil, tuning condenser or IF transformer has to be replaced or the set has been subject to damage or tampering. Alignment should only be done with the aid of an accurate signal generator and output indicating instrument.

TO PROPERLY ALIGN—Remove chassis from cabinet, and align I. F. Transformers in the conventional manner with a Signal Generator adjusted to 455 KC, connected to the grid of the 6SA7 through a .1 Mfd. condenser, with the tuning condenser set at minimum capacity. To align tuning condenser, carefully place loop in normal relation to chassis, connect Signal

REMOVAL OF CHASSIS FROM CABINET—The chassis proper is mounted to the cabinet front and the assembly is supported on "hook" hinges within the cabinet. For general inspection and tube replacement, the assembly may be removed. First remove the power cord from the wall outlet. Tilt the front to the partial open position shown in the picture, then carefully lift up and slightly forward until the assembly is "free." While holding the assembly just below and in front of the cabinet, reach inside and disconnect the speaker cable by pulling forward on the cable and plug. The assembly may then be placed on the floor or a table for inspection.

WESTERN AUTO SUPPLY CO. MODEL D1752



MODEL D1752 WESTERN AUTO SUPPLY CO.

ALIGNMENT PROCEDURE

First determine if factory adjustments of the permeability tuner cores have been altered. This may be done by checking core positions against dimensions shown in tuner illustration. Broken wax seals on the core adjustments may also indicate altering. If the slug adjustments have been changed, it will be necessary to first adjust them in accordance with the dimensions given in tuner illustration before proceeding with alignment.

The following equipment is necessary to properly align this receiver:

1. AM signal generator with frequency coverage from 455 kc. to 1700 kc.
2. FM or CW signal generator covering the FM band from 87.25 mc. to 108.75 mc. and the 10.7 mc. frequency for FM IF alignment.
3. Vacuum Tube Voltmeter (VTVM).
4. Output meter—to match 4 ohms, 5 watts maximum.
5. Insulated alignment screwdriver.
6. Dummy antenna—0.1 mfd. capacitor, 300 ohm carbon resistor and inductive loop (fashioned from several turns of wire).

NOTE: Oscilloscope equipment not required if aligned according to the following procedure:
The accuracy of the AM RF and AM antenna slug adjustments may be determined by noting the trimmer adjustment at each end of the band when the oscillator is set for proper coverage. The proper setting of the AM or FM oscillator slugs is indicated by proper tracking of the receiver at the center of the respective band. The FM RF and FM antenna slugs must be adjusted to dimensions given in the permeability tuner illustration.

Reference Notes to Alignment Chart on Following Page.

Note 1—If 1620 kc. signal is received lower in frequency than the 1620 kc. dial calibration, turn BC oscillator shunt tracking adjustment (L-4) outward. Retrack at 535 kc. (Step 2). If higher than the 1620 kc. dial calibration, screw adjustment inward and retrack at 535 kc. Repeat until 535 kc. and 1620 kc. signals coincide with their respective dial calibrations.

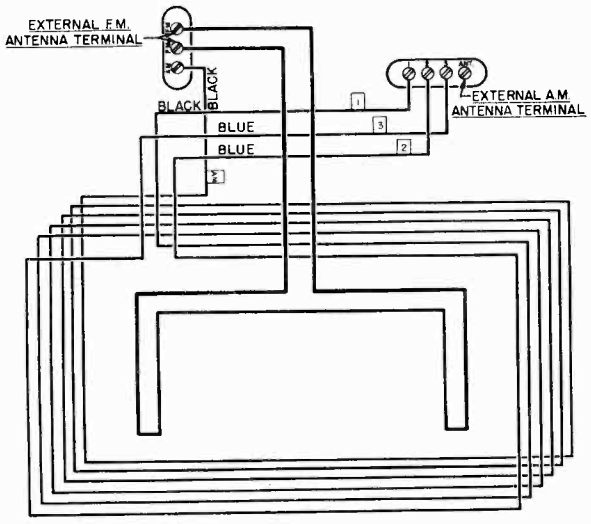
Note 2—Adjust input voltage to give approximately 5 volts AVC before final adjustment is made.

For STEPS 6 and 8A—Voltmeter "common" lead to chassis.

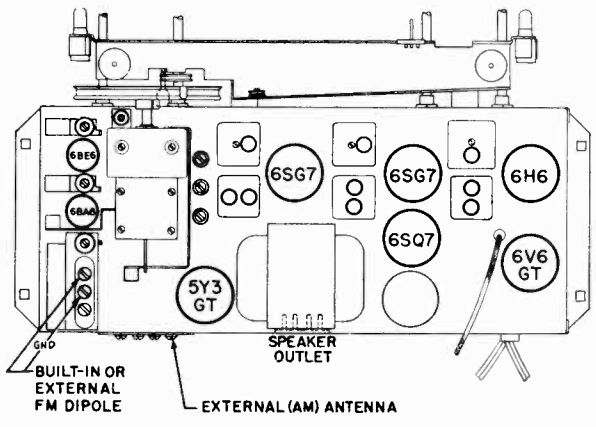
For STEP 7—Voltmeter "common" lead to point "B" on wiring diagram. The desired zero position is at the point where the meter indicates a polarity change from plus to minus or vice-versa.

Note 3—For all tests requiring an FM signal, the generator output (22.5 kc. deviation, 400 cycles) must be adjusted to give approximately one-half watt receiver output before final adjustments are made. Either STEP 8A or 8B may be used depending on equipment available.

Note 4—If 108.75 mc. signal is received lower in frequency than the 108.75 mc. dial calibration, turn FM oscillator shunt tracking adjustment (L-5) outward. Retrack at 87.25 mc. (STEP 9). If higher than the 108.75 mc. dial calibration, screw adjustment inward and retrack at 87.25 mc. Repeat until 87.25 mc. and 108.75 mc. signals coincide with their respective dial calibrations.



Loop Antenna Connections



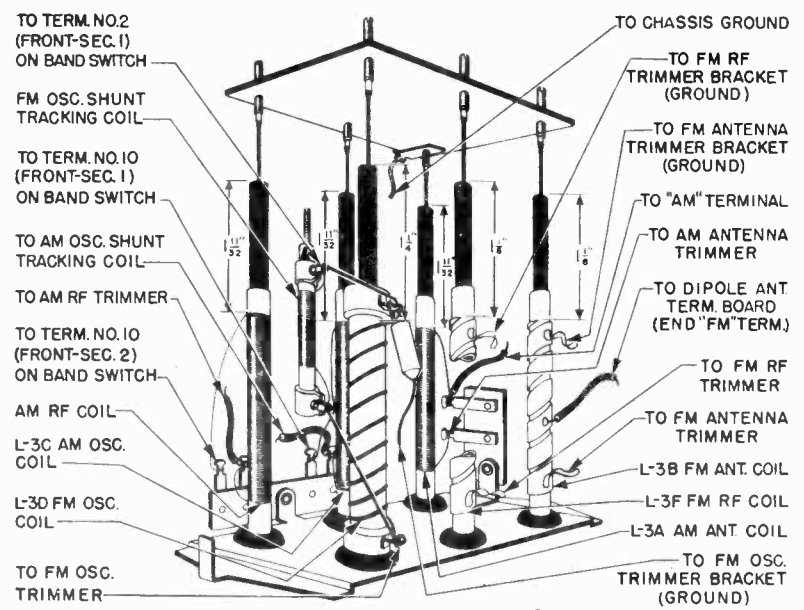
Tube Layout

WESTERN AUTO SUPPLY CO. MODEL D1752

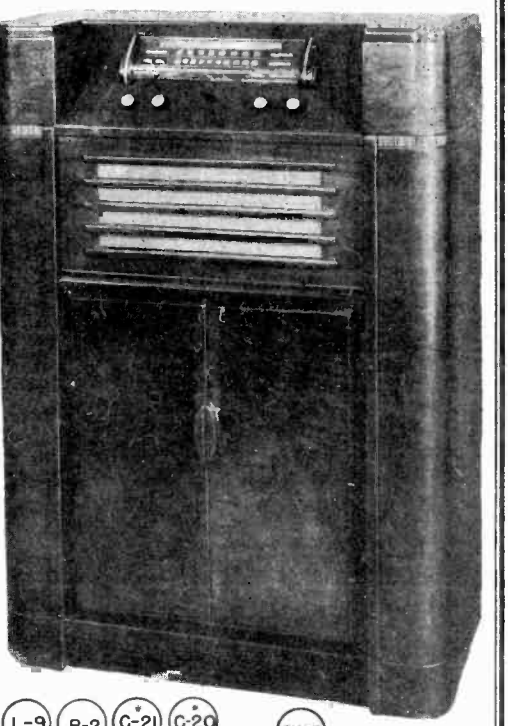
ALIGNMENT CHART

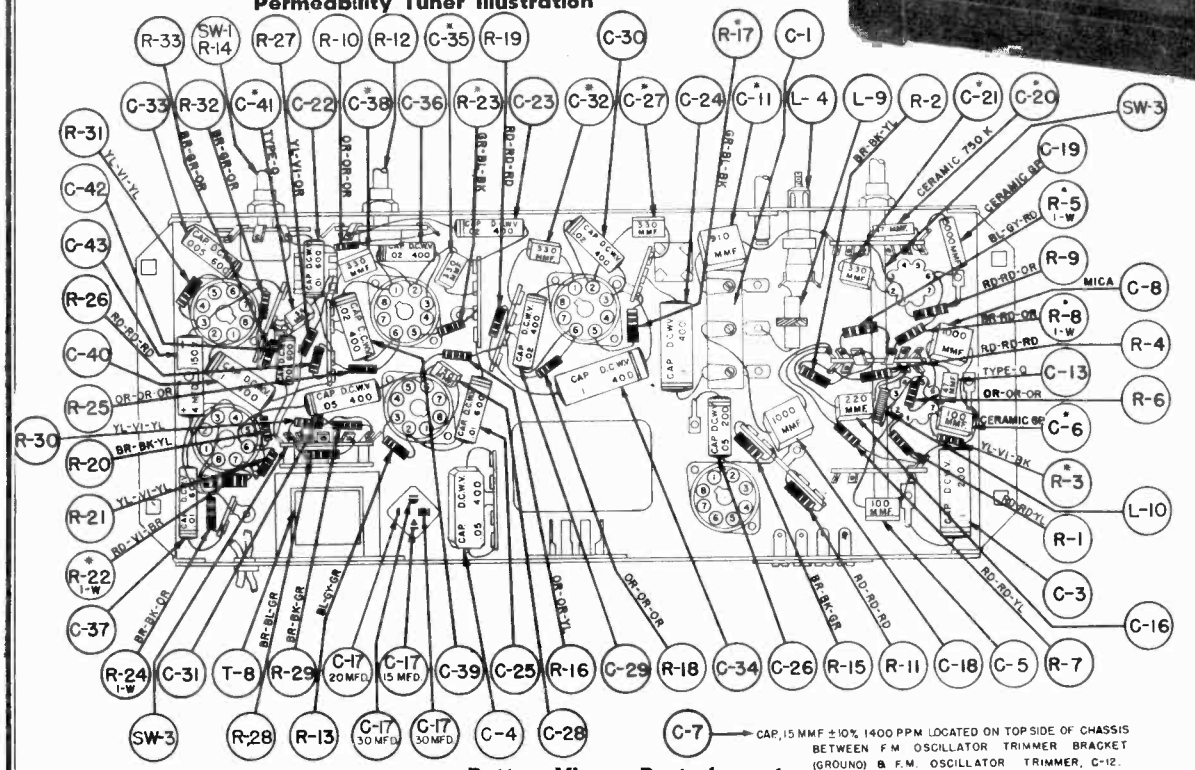
Step No.	Band Switch Position	Signal Generator	Connection at Receiver	Dummy Antenna	Dial Setting	Adjust Trimmer	Remarks
1	AM	455 kc.	6BE6 Converter Grid Pin No. 7	0.1 mfd.	HF end	E, F, H, J, L, M, AM IF Trimmers	Adjust for Maximum Output.
2	AM	535 kc.	6BA6 Grid Pin No. 1	0.1 mfd.	LF end	C-10 AM Osc. Trimmer	Adjust for Maximum Output.
3	AM	1620 kc.	6BA6 Grid Pin No. 1	0.1 mfd.	HF end	L-4 AM Osc. Shunt Tracking Adjustment. (Remove Flywheel from Shaft of Tuning Control.)	Adjust for Band Coverage. (See Note 1.)
4	AM	535 kc.	6BA6 Grid Pin No. 1	0.1 mfd.	LF end	C-14 AM RF Trimmer	Adjust for Maximum Output.
5	AM	1400 kc.	Thru Loop (With Receiver Loop Connected to Set.)	Inductive Loop	1400 kc.	C-1 AM Antenna Trimmer	Adjust for Maximum Output.
6	FM	10.7 mc. (CW Signal)	6SG7 Driver Grid Pin No. 4	0.1 mfd.	HF end	L-8 Ratio Detector Primary	Adjust for Maximum AVC between Point "A" on Wiring Diagram and Chassis using Electronic Voltmeter. See Notes 2 and 3.
7	FM	10.7 mc. (CW Signal)	6SG7 Driver Grid Pin No. 4	0.1 mfd.	HF end	K Ratio Detector Secondary	See Note 2. Adjust for Zero Position (Using Electronic Voltmeter) from No. 12 Position on Single Section Switch and Point "B" on Wiring Diagram.
8A	FM	10.7 mc. (CW Signal)	6BE6 Converter Grid Pin No. 7	0.1 mfd.	HF end	L-6, D, L-7, G 1st and 2nd FM IF	See Note 2. Adjust for Maximum AVC.
8B	FM	10.7 mc. (CW Signal)	6BE6 Converter Grid Pin No. 7	0.1 mfd.	HF end	L-6, D, L-7, G 1st and 2nd FM IF	See Note 3. Adjust for Maximum Output.
9	FM	87.25 mc. (FM Signal)	6BA6 Grid Pin No. 1	0.1 mfd.	LF end	C-12 FM Osc. Trimmer	Adjust for Maximum Output.
10	FM	108.75 mc. (FM Signal)	6BA6 Grid Pin No. 1	0.1 mfd.	HF end	L-5 FM Osc. Shunt Tracking Adjustment	Adjust for Band Coverage. (See Note 4.)
11	FM	87.25 mc. (FM Signal)	6BA6 Grid Pin No. 1	0.1 mfd.	LF end	C-15 FM RF Trimmer	Adjust for Maximum Output.
12	FM	87.25 mc. (FM Signal)	Thru 300 ohm Carbon Resistor to End FM Antenna Terminal and Center FM Antenna Terminal.	300 ohm Carbon Resistor	87.25 mc.	C-2 FM Antenna Trimmer	Adjust for Maximum Output.

MODEL D1752 WESTERN AUTO SUPPLY CO.

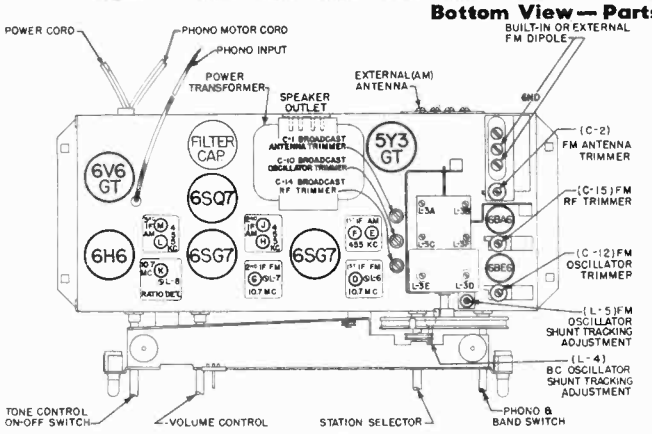


Permeability Tuner Illustration

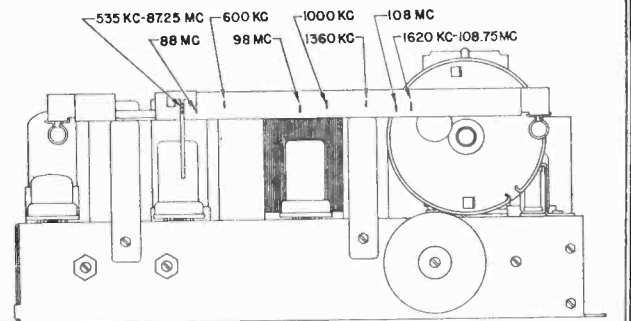




Bottom View — Parts Layout



Trimmer Location



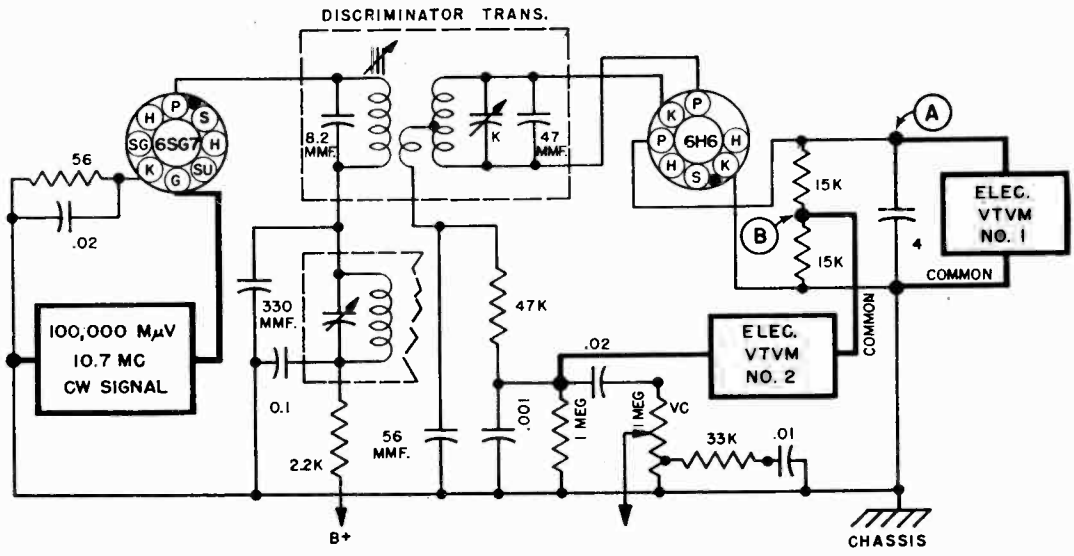
Calibration Points

WESTERN AUTO SUPPLY CO. MODEL D1752

RATIO DETECTOR

Proper operation of the ratio detector stage is extremely important for best performance on the FM band of this receiver.

The performance of the ratio detector stage may be checked by closely following the procedure and diagram given below.



Wiring Diagram—Ratio Detector

1. After setting up the signal generator and VTVM, turn the trimmer adjustment screw "K" until tight. Turn the core adjustment "L" to maximum counterclockwise position. These two adjustments are on the top of the Ratio Detector transformer. (See Trimmer Location diagram.)

2. Now turn adjustment "L" clockwise until VTVM in No. 1 position indicates maximum voltage. This maximum value should be from five to seven volts with input as indicated in above diagram. Then slowly turn adjustment "K" in a counterclockwise direction, observing VTVM in No. 2 position. It will approach a maximum value and then rapidly drop to zero. If adjustment "K" is turned beyond this point, VTVM in No. 2 position will indicate a polarity change. The proper adjustment of "K" is at the point where the VTVM indicates zero volts between the polarity change.

3. Shift the 10.7 mc. signal to 10.725 mc. (10.7 mc. +25 kc.). VTVM in No. 2 position should now indicate a plus .3 volts minimum.

4. Change the 10.725 mc. signal to 10.675 mc. (10.7 mc. —25 kc.). VTVM in No. 2 position should indicate a minus .3 volts minimum. STEPS 3 and 4 constitute a sensitivity check on the ratio detector transformer.

5. Place the polarity switch of VTVM in No. 2 position to "plus" position and observe VTVM as the frequency of the signal generator is increased above 10.7 mc. It should indicate an increasing positive voltage. Continue increasing the frequency until the meter indicates a peak and begins to decrease. Reduce the generator frequency slightly until the peak is obtained. Record the generator frequency.

6. Set the polarity switch of VTVM to "minus" position. Repeat STEP 5, reducing the generator frequency from 10.7 mc. instead of increasing. Record the generator frequency when VTVM in No. 2 position indicates a peak.

7. The difference between the generator frequencies noted in STEPS 5 and 6 is the "Static Band Width" of the Ratio Detector transformer. This should be approximately 220 kc.

ELECTRICAL AND MECHANICAL DATA

Frequency Range	(AM) 535 KC to 1620 KC	Speaker	8 inch, Electro-Dynamic
Intermediate	(FM) 87.25 MC to 108.75 MC	V.C. Impedance	3.2 ohms at 400 cycles
Frequency	(AM) 455 KC (FM) 10.7 MC	Power Output (Undistorted)	3.5 watts
Power Supply	105 to 125 volts AC, 60 cycles	Power Output (Maximum)	5 watts

TUBE COMPLEMENT

1	6BA6	RF Amplifier	1	6SQ7	AM Detector—AVC—1st Audio (AM-FM)
1	6BE6	Oscillator-Converter	1	6H6	FM Detector
1	6SG7	1st IF Amplifier	1	6V6GT	Power Output
1	6SG7	2nd IF Amplifier	1	5Y3GT	Rectifier

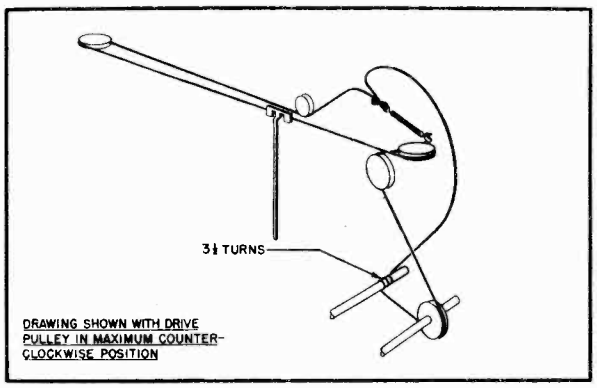
SOCKET VOLTAGES

TUBE	POSITION	1	2	3	4	5	6	7	8
6BA6	RF Amplifier	0	0	6.3 AC	0	250	100	.6	
6BE6	Oscillator-Converter	0	0	6.3 AC	0	250	90	0	
6SG7	1st IF Amplifier	0	0	.6	0	.6	125	6.3 AC	250
6SG7	2nd IF Amplifier	0	0	.6	0	.6	125	6.3 AC	250
6SQ7	AM Detector—AVC—1st Audio (AM-FM)	0	0	0	0	0	90	6.3 AC	0
6H6	FM Detector	0	6.3 AC	0	0	0	0	0	0
6V6GT	Power Output	NC	0	240	260	0	260	6.3 AC	14
5Y3GT	Rectifier	NC	325	NC	325 AC	NC	325	NC	325

NOTE: All DC voltages measured with a 1000 ohm-per-volt meter from B— to socket contact indicated. All voltages are positive DC unless otherwise marked. Volume control full on. Zero signal input. Tone control in clockwise position. Band switch in "AM" position. Line voltage 117 volts, 60 cycle AC.

CHASSIS REMOVAL – Remove the receiver power cord from the electrical outlet before starting to remove chassis.

1. Turn the tuning control so that the dial pointer is in the extreme left-hand position (low frequency end).
2. Unhook the dial cable from dial pointer and slide the pointer to center of cutout in the pointer track. The dial pointer may be removed, if necessary, by turning it clockwise and clearing it through the cutout.
3. Remove the loop and dipole antennae leads from their respective terminals.
4. Detach the phono-motor cord (plug and socket connection).
5. Remove the phono input leads at the terminal board on the chassis shelf and remove the speaker plug from receptacle at back of chassis.
6. Remove knobs and the four chassis mounting screws. The chassis can now be removed from the cabinet.



Dial Stringing

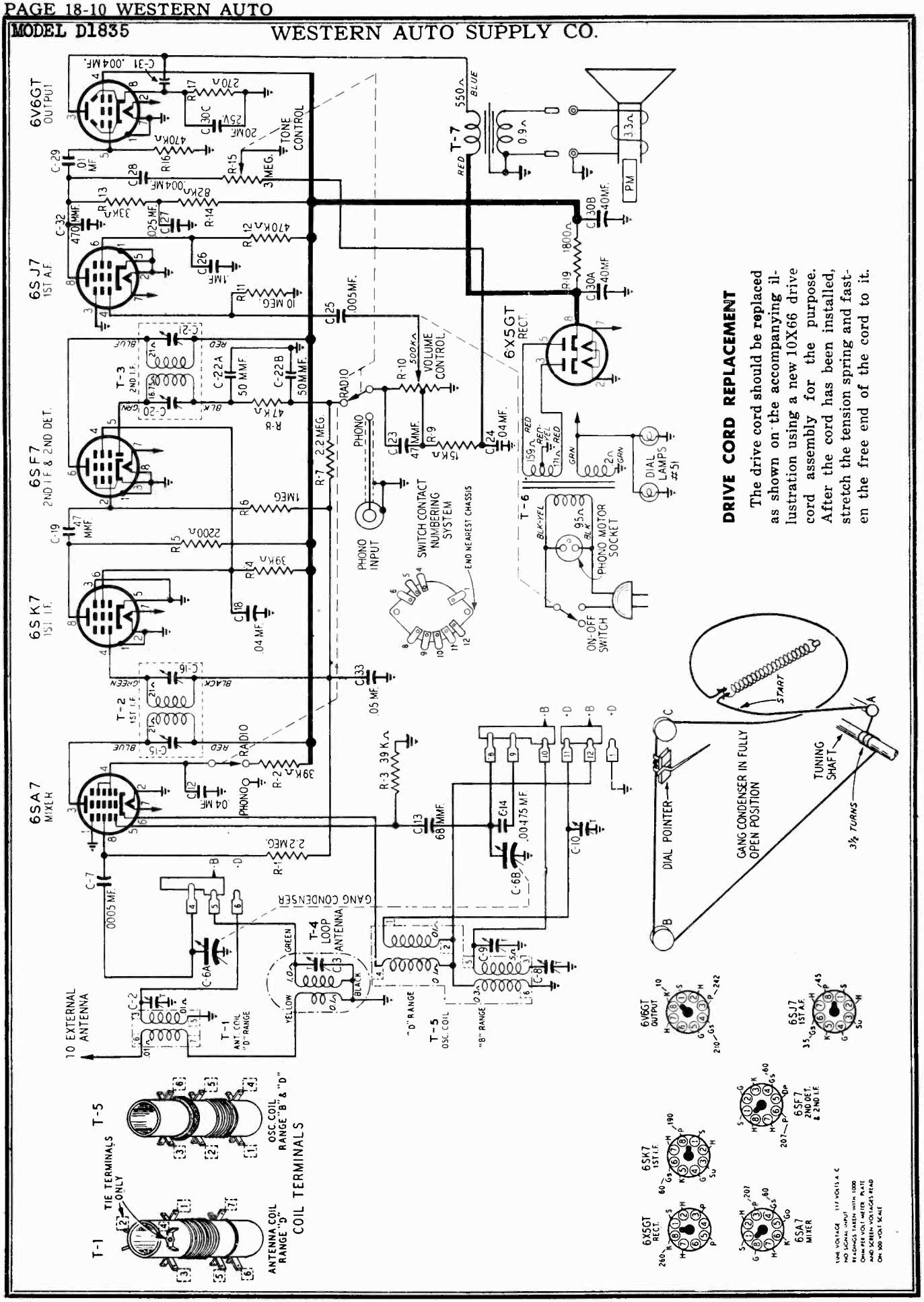
WESTERN AUTO SUPPLY CO. MODEL D1752

SERVICE PARTS LIST

Symbol	Part No.	Description
	A-51729	Bushing, Shaft
	A-54848	Bushing, Strain Relief
	E-57941-1	Cabinet
	A-58341	Cable, Dial
C-33	BD610502	Capacitor, .005 mfd., 600 v.
C-42, 44	BD610102	Capacitor, .001 mfd., 600 v.
C-22, 35, 37	BD610103	Capacitor, .01 mfd., 600 v.
C-23, 29, 30, 36, 39	BD410203	Capacitor, .02 mfd., 400 v.
C-26	BD210503	Capacitor, .05 mfd., 200 v.
C-31	BD410503	Capacitor, .05 mfd., 400 v.
C-4	BC31B503	Capacitor, .05 mfd., 400 v.
C-3	BD210104	Capacitor, .1 mfd., 200 v.
C-24, 34, 40	BD410104	Capacitor, .1 mfd., 400 v.
C-1	B-57942-1	Capacitor Assy., Trimmer (3 sec.)
C-19	B-58802-11	Capacitor, Ceramic, 5000 mmf., G.P.
C-5	B-58801-18	Capacitor, Ceramic, 100 mmf., G.P.
C-20	B-58800-27	Capacitor, Ceramic, 47 mmf. (—750 ppm)
C-7	B-58803-16	Capacitor, Ceramic, 15 mmf. (—1400 ppm)
C-43	B-55520-1	Cap., Electro., 4 mfd., 150 v.
C-17	A-57950	Cap., Electro., 30-30-75 mfd., 400 v.—20 mfd., 25 v.
C-8, 18	BM74A102	Capacitor, Mica, 1000 mmf.
C-11	BM64A911	Capacitor, Mica, 910 mmf.
C-21, 27, 32, 35, 38	BM64A331	Capacitor, Mica, 330 mmf.
C-16	BM74A221	Capacitor, Mica, 220 mmf.
C-28	BM74A151	Capacitor, Mica, 150 mmf.
C-6	BM74A101	Capacitor, Mica, 100 mmf.
C-41	B-58902-11	Capacitor, Mica Mold., Type Q, 56 mmf.
C-13	B-58900-6	Capacitor, Mica Mold., Type Q, 47 mmf.
C-2	B-57939-2	Cap., Trimmer, 10-25 mmf.
C-12, 15	B-57939-1	Cap., Trimmer, 1.5—14 mmf.
	B-55260-1	Clip, Capacitor Mtg.
	A-57925	Cup, Spring
L-10	A-57931	Coil Assy., R.F. Choke
L-9	B-57933	Coil Assy., Series Track. BC Osc.
L-4	B-57929	Coil Assy., Shunt Track. BC Osc.
R-14	B-58219-1	Control, Pot. and Sw., 1 megohm (T.C.)
R-12	B-58218-1	Control, Pot., 2 meg. (V.C.)
	B-57262-7	Cord, AC-Phono.
	B-58069-2	Cord, Power
	A-57999	Crank, Switch Lever
	C-59317-1	Crystal and Indicator, Dial
	A-59321	Flywheel, Tuning Shaft
	B-59315-1	Holder, Crystal, Right-Hand
	B-59315-2	Holder, Crystal, Left-Hand
	B-57998	Hub Crank
	C-57872-1	Knob, Magnifying Insert
	C-59338-1	Knob, Magnifying Insert (Indicator)
	A-6158	Lamp, Pilot No. 47
	B-51524-4	Lead, Shielded
	B-57922	Link, Band Switch
L-3A, 3B, 3C, 3D, 3E, 3F, and L-5	D-57920	Permeability Tuner Assy.
		Perm. Tuner Assembly (on exchange basis only)
	A-59316-1	Pointer, Dial
R-3	BR16B470	Resistor, 47 ohm, ⅓ w.
R-17, 23	BR16B560	Resistor, 56 ohm, ⅓ w.
R-22	BR16E271	Resistor, 270 ohm, 1 w.
R-4, 11, 19, 26	BR17B222	Resistor, 2,200 ohm, ⅓ w.
R-5	BR16E682	Resistor, 6,800 ohm, 1 w.
R-24	BR17E103	Resistor, 10,000 ohm, 1 w.
R-8	BR16E123	Resistor, 12,000 ohm, 1 w.
R-32, 33	BR17B153	Resistor, 15,000 ohm, ⅓ w.
R-9	BR17B223	Resistor, 22,000 ohm, ⅓ w.
R-6, 10, 18, 25	BR17B333	Resistor, 33,000 ohm, ⅓ w.
R-27	BR17B473	Resistor, 47,000 ohm, ⅓ w.
R-2, 20	BR17B104	Resistor, 100,000 ohm, ⅓ w.
R-1, 7, 34, 35	BR17B224	Resistor, 220,000 ohm, ⅓ w.
R-16	BR17B334	Resistor, 330,000 ohm, ⅓ w.
R-21, 30, 31	BR17B474	Resistor, 470,000 ohm, ⅓ w.
R-15, 28		Resistor, 1 megohm, ⅓ w.
29	BR17B105	
R-13	BR17B685	Resistor, 6.8 megohm, ⅓ w.
	A-51801	Rivet, Pronged
	B-55280-1	Shaft, Drive
	B-51469-3	Socket, Dial Light
	A-57996	Socket, Miniature
	A-54726	Socket, Octal
	A-51403	Socket, Speaker
	B-55180-3	Spacer, Metal
SP-1	C-59310	Speaker, 8-inch Electro-Dyn.
	A-51787	Spring, Cable
	A-50147	Spring, Conical
	A-59333	Strip, Crystal Holder (Trim)
T-3	B-57954-1	Transformer Assembly, 1st IF AM
T-5	B-57958-1	Transformer Assembly, 2nd IF AM
T-7	B-57963-1	Transformer Assembly, 3rd IF AM
T-2	B-57972-1	Transformer Assembly, 1st IF FM
T-4	B-57976-1	Transformer Assembly, 2nd IF FM
T-6	B-57994-1	Transformer Assembly, Ratio Det.
T-8	B-57997-1	Transformer, Output
T-1	C-57934	Transformer, Power

MODEL D1835

WESTERN AUTO SUPPLY CO.



DRIVE CORD REPLACEMENT

The drive cord should be replaced as shown on the accompanying illustration using a new 10X66 drive cord assembly for the purpose. After the cord has been installed, stretch the tension spring and fasten the free end of the cord to it.

ALIGNMENT PROCEDURE

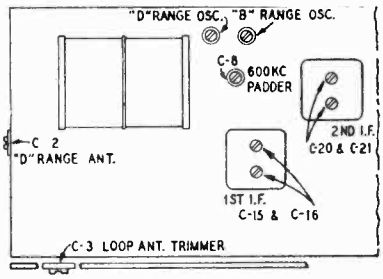
Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning: An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.
Output Indicating Meter—Non-Metallic Screwdriver.
Dummy Antennas—.1 mf., 50 mmf., and 400 ohms.

	SIGNAL GENERATOR FREQUENCY SETTING	CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
I.F.	455 KC	Grid of 6SA7 Pin 8	.1 mf.	B Range	Turn Rotor to Full Open	1st I.F. (C15) & (C16) 2nd I.F. (C20) & (C21)
RANGE B	1620 KC	Antenna Lead	50 mmf.	B Range	Turn Rotor to Full Open	Oscillator Range B (C9)
	1400 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output	Ant. Range B (C3)
	600 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output	600 KC (C8) See Note B
	Repeat above steps at 1620 and 600 KC until readjusting the oscillator Range B Trimmer (C9) causes no further improvement in output.					
RANGE D	18.3 MC	Antenna Lead	400 Ohm	D Range	Turn Rotor to Full Open	Oscillator Range D (C10)
	16 MC	Antenna Lead	400 Ohm	D Range	Tune Rotor to Max. Output	Ant. Range D (C2) Rock Rotor—See Note B
LOOP RANGE B	Reassemble chassis in cabinet. 1400 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output See Note A	Ant. Range B (C3)



NOTE A—Set pointer at the 1400 KC mark on the dial scale. Attach pointer to drive cord.

NOTE B—Turn rotor back and forth and adjust the trimmer until peak of greatest intensity is obtained.

SPECIFICATIONS

Power Consumption ..... 45 Watts (At 117 volts AC)
Power Output ..... 4 Watts Maximum 2.3 Watt 10% Harmonics
Selectivity ..... 40KC Broad at 1000 times Signal
Intermediate Frequency ..... 455 KC
Speaker ..... 12" PM Dynamic
Tuning Frequency Range
B Range ..... 540 to 1600 KC
D Range ..... 5.75 to 18.3 MC

Sensitivity (For .05 watt output—External Antenna).
B Range ..... 9 Microvolts Average
D Range ..... 20 Microvolts Average

REMOVAL OF CHASSIS FROM CABINET

Before removing the chassis from the cabinet it will be necessary to detach the dial pointer from the dial string. To do this, spread the tabs on the pointer and pull the dial string off the pointer.

The dial lamp socket assemblies may be disengaged from the cabinet mounting by squeezing together and pulling away from the cabinet mounting, the spring bracket to which the dial lamp socket is mounted. Take care not to bend or damage the large drive pulley on the gang condenser while doing this.

When replacing the chassis in the cabinet it will be necessary to tune in a station of a known frequency and move the dial pointer until that frequency is indicated on the dial and then attach the pointer to the dial string. Take care not to scuff or cut the dial string or bend the pointer during this operation.

MISCELLANEOUS

12A486	12" P.M. Speaker
3A303	Tube Socket—Octal (8 prong) Moulded
3A304	Phono Motor Socket
3A305	Phono Socket—Single Pin Tip
10A467	Knob (Tuning)
10A468	Knob (Off-On Volume)
10A634	Knob (SW-BC)
10A529	Knob (Tone—R.P.)
2A372	Band Change Switch
13X328	Line Cord and Plug Assembly
	No. 856 Console Cabinet

TRANSFORMERS AND COILS

T-1	9A1917	"D" Range Antenna Coil Assembly
T-2	9A1814	1st I-F Coil Assembly
T-3	9A1815	2nd I-F Coil Assembly
T-4	26A474	"B" Range Loop Antenna
T-5	9A1918	Oscillator Coil Assembly
T-6	53X282	Power Transformer
T-7	51X134	Output Transformer

CAPACITORS

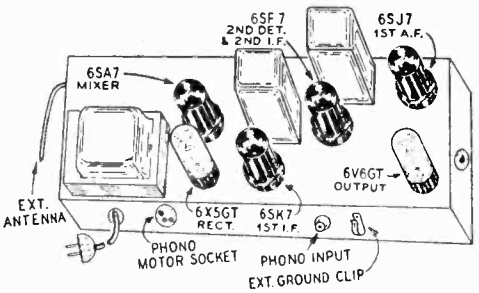
C-2	17A164	5-50 mmf		Trimmer
C-3	17A235	2-24 mmf		Trimmer
C-6A, C-6B	14A184	Gang Condenser with Drive Pulley		
C-7	B66501	.0005 mf	200 V	Tubular
C-8	17A155	350-430 mmf		Trimmer
C-9, C-10	17A109	2.5-35 mmf		Dual Trimmer
C-12, C-18	D66403	.04 mf	400 V	Tubular
C-13	47X466	68 mmf		Moulded
C-14	46X289	.00475 mf	180 V	Tubular
C-15, C-16	Part of T-2 (1st I-F Coil Assembly)			
C-19, C-23	47X463	47 mmf		Moulded
C-20, C-21	Part of T-3 (2nd I-F Coil Assembly)			
C-22A, C-22B	47X112	50-50 mmf		Dual Mica
C-24	D54403	.04 mf	400 V	Tubular
C-25	D66502	.005 mf	400 V	Tubular
C-26	D67104	.10 mf	400 V	Tubular
C-27	D64253	.025 mf	400 V	Tubular
C-28	D66402	.004 mf	400 V	Tubular
C-29	D66103	.01 mf	400 V	Tubular
C-30A	45X346	40 mf	450 V	3 Section Electrolytic
C-30B		40 mf	450 V	
C-30C		20 mf	25 V	
C-31	H66402	.004	800 V	Tubular
C-32	47X467	470 mmf		Moulded
C-33	B66503	.05 mf	200 V	Tubular

RESISTORS

B85225	R-1, R-7	2.2 megohms	0.5 W	Carbon
C84393	R-2, R-4	39 K ohms	1.0 W	Carbon
B84393	R-3	39 K ohms	0.5 W	Carbon
B84222	R-5	2200 ohms	0.5 W	Carbon
B85105	R-6	1 megohm	0.5 W	Carbon
B85473	R-8	47 K ohms	0.5 W	Carbon
B84153	R-9	15 K ohms	0.5 W	Carbon
36X358	R-10	500 K ohms		Volume Control and Line Switch
B85106	R-11	10 megohms	0.5 W	Carbon
B85474	R-12, R-16	470 K ohms	0.5 W	Carbon
B84333	R-13	33 K ohms	0.5 W	Carbon
B84823	R-14	82 K ohms	0.5 W	Carbon
40X276	R-15	3.0 megohms		Tone Control & Radio Phono Switch
C84271	R-17	270 ohms	1.0 W	Carbon
D84182	R-19	1800 ohms	2.0 W	Carbon

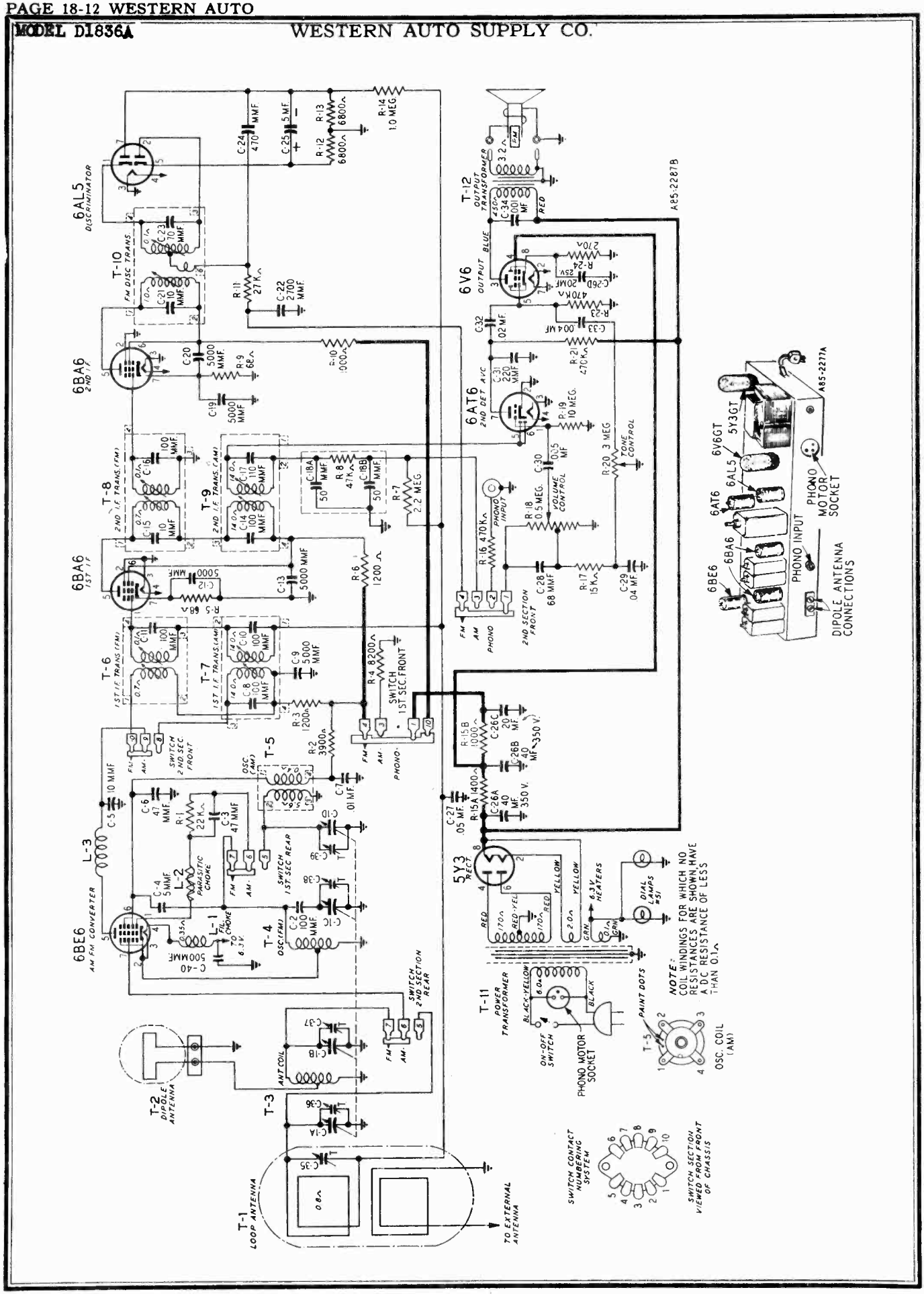
DIAL AND DRIVE ASSEMBLY

6X21	Rubber Grommet } Mtg. Gang Condenser
20X329	Cond. Cushion Stud } Mtg. Gang Condenser
25X1489	Pulley Bracket (Right)
25X1490	Pulley Bracket (Left)
26X485	Drive Shaft
19X192	"C" Washer
25X1491	Pointer Bracket
15X229	Pointer
10X66	Drive Cord Assembly
28X113	Drive Cord Tension Spring
30X517	Dial Clamp
4X915	Escutcheon, Dial (Right)
4X916	Escutcheon, Dial (Left)
4X931	Escutcheon Insert
58X694	Dial Gloss
7A100	Pilot Light Socket Assembly
7A32	Pilot Light Bulb No. 51



MODEL D1836A

WESTERN AUTO SUPPLY CO.



WESTERN AUTO SUPPLY CO. MODEL D1836A

SUPPLEMENTARY SERVICE DATA

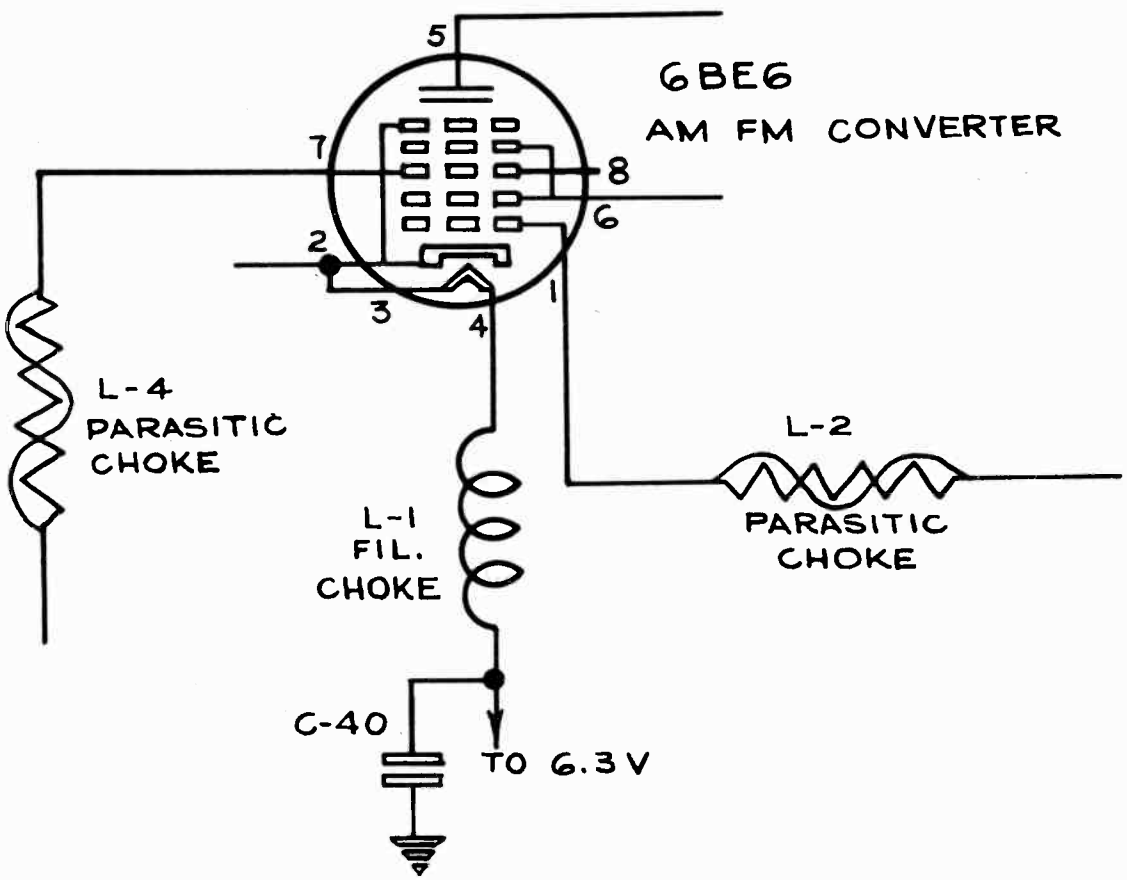
TRUETONE MODEL D1836A

A choke has been added to the circuit to eliminate parasitic oscillation on the FM Band.

PARTS LIST ADDITION

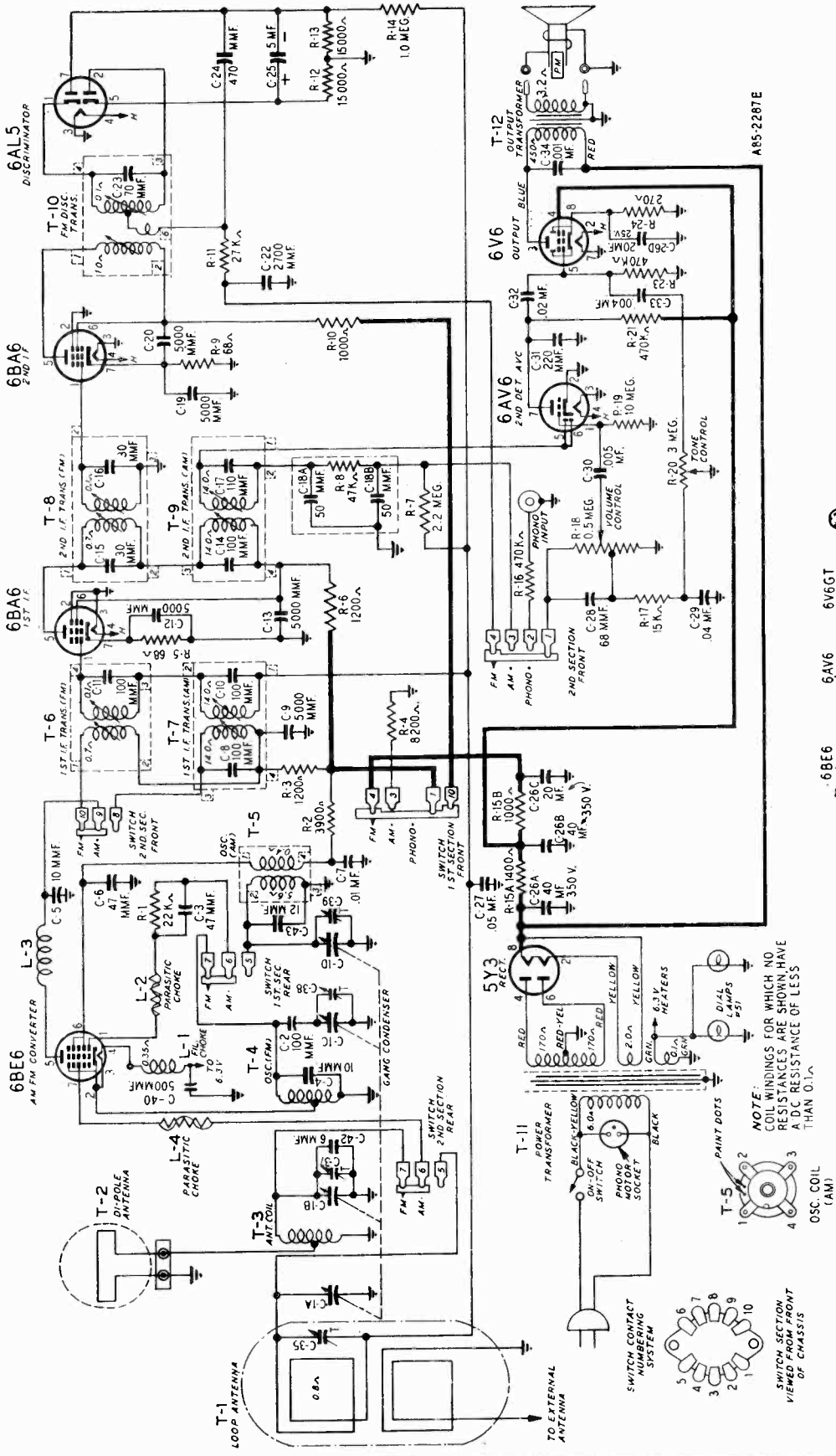
Ref.#	Part #	Description
L-4	9A1967	Parasitic Choke

The circuit connection of L-4 is shown in the partial schematic below.



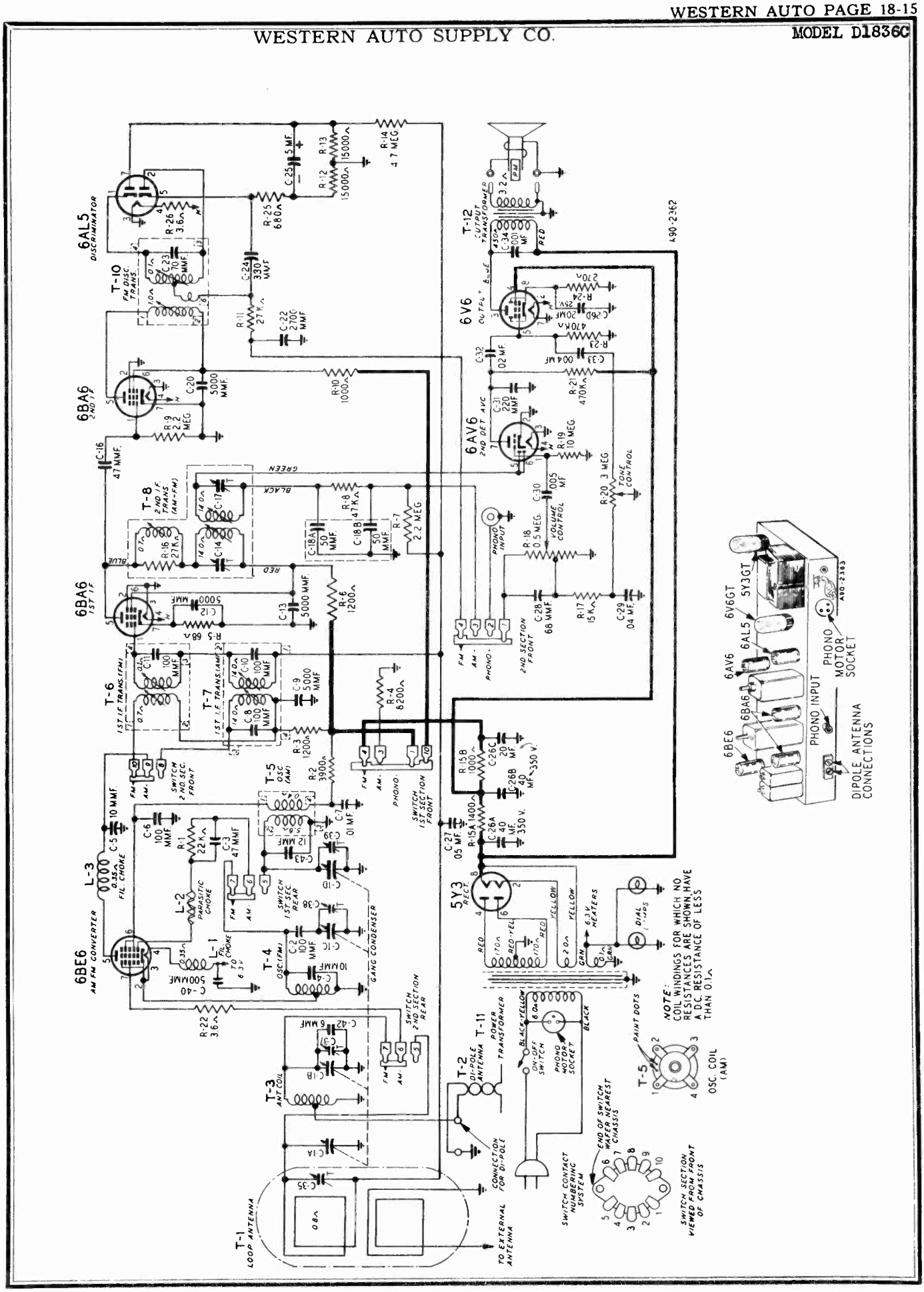
MODEL D1836B

WESTERN AUTO SUPPLY CO.



WESTERN AUTO SUPPLY CO.

MODEL D1836C



MODELS D1836A, D1836B WESTERN AUTO SUPPLY CO.

ALIGNMENT PROCEDURES

AM STAGES

Volume Control Maximum all Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for Several Minutes.

The following is required for aligning:

An All Wave Signal Generator Which Will Provide an Accurately Calibrated Signal at the Test Frequencies as Listed.

Output Indicating Meter, Non-Metallic Screwdriver, Dummy Antennas — .1 mf, and 50 mmf.

SIGNAL GENERATOR					
FREQUENCY SETTING	CONNECTION AT RADIO	GROUND CONNECTION	DUMMY ANTENNA	GANG CONDENSER SETTING	ADJUST TUNING SLUGS (I-F ONLY) TRIMMERS (OSC. & ANT.)
455 KC	Control Grid 1st 6BA6 Pin No. 1	Chassis Base	.1 mf	Turn Rotor to Full Open	2nd I.F. Pri. & Sec.
455 KC	Control Grid 6BE6 Pin No. 7 1st Det.	Same as above	.1 mf	Turn Rotor to Full Open	1st I.F. Pri. & Sec.
1620 KC	Control Grid 6BE6 Pin No. 7	Same as above	.1 mf	Turn Rotor to Full Open	Oscillator C-39
1400 KC	External Antenna Lead	Same as above	50 mmf	Turn Dial to 1400 KC. See Note A	Antenna C-35

NOTE A—Set pointer at the 1400 KC mark on the dial scale. Attach pointer to drive cord.

FM STAGES

Allow chassis and signal generator to warm up for several minutes. The following equipment is required for aligning:

An accurately calibrated signal generator providing unmodulated signals at the test frequencies listed below.

Non-metallic screwdriver.

Dummy Antennas and I-F Loading Resistor—.01 mf, 300 ohms and 100 K ohms.

Zero center scale DC vaccum tube voltmeter having a range of approximately 3 volts.

(If a zero center scale meter is not available, a standard scale vacuum tube voltmeter may be used by reversing the meter connections for negative readings.)

	SIGNAL GENERATOR					
	FREQUENCY SETTING	CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	GANG CONDENSER SETTING	ADJUSTMENT FOR MAX. METER DEFLECTION
Discriminator	10.7 MC	6BA6 2nd I-F Pin 1 & Chassis	.01 mf	FM	Rotor to Full Open	Disc. Pri. Note A
	10.7 MC	Same as above	.01 mf	FM	Same as above	Disc. Sec. Note B
	10.7 MC	Same as above	.01 mf	FM	Same as above	Disc. Pri. Note A
	10.7 MC	Same as above	.01 mf	FM	Same as above	Disc. Sec. Note B
I-F	10.7 MC	6BA6 1st IF Pin 1 & Chassis	.01 mf	FM	Same as above	2nd I-F Pri. 2nd I-F Sec. Note C
	10.7 MC	Unsolder lead from Pin 7 to band switch. Insert 100K ohm resistor between Pin 7 & Graund and feed signal into Pin 7 of 6BE6	.01 mf	FM	Same as above	1st I-F Pri. Note C
	10.7 MC	Same as above	.01 mf	FM	Same as above	1st I-F Sec. Note C
	RECHECK I-F ADJUSTMENTS IN ORDER GIVEN					
Ant. & Osc.	108.5 Note D	Disconnect dipole and connect generator to dipole terminals with resistor in series.	300 ohms	FM	Rotor to Full Open	Osc. C-38
	104.5	Same as above	300 ohms	FM	Tune rotor for max. AVC voltage	Ant. C-37

RECHECK ANTENNA & OSC. ADJUSTMENTS IN ORDER GIVEN

FM ALIGNMENT NOTES

NOTE A—The zero center scale DC vacuum tube voltmeter is to be connected between chassis ground and the A.V.C. line at the 27 K. ohm resistor (R-11) and its junction with terminal strip. A signal of .1 volt must be fed into the receiver for this adjustment.
Note output voltage on the zero center DC vacuum tube voltmeter.

NOTE B—Disconnect zero center DC vacuum tube voltmeter from A.V.C. and connect it to the audio takeoff point at the 1 megohm resistor (R-14) and its junction with the terminal strip. Adjust for zero voltage indication.

NOTE C—Connect zero center DC vacuum tube voltmeter as in Note A. Adjust input to give same output on the zero center DC vacuum tube voltmeter as in Note A.

NOTE D—Remove the 100 K ohm load resistor and solder the lead from pin 7 of 6BE6 tube to the band switch before attempting to check the antenna and oscillator adjustments.

WESTERN AUTO SUPPLY CO. MODEL D1836C

ALIGNMENT PROCEDURES

AM STAGES

Volume Control Maximum all Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for Several Minutes.

The following is required for aligning:

An All Wave Signal Generator Which Will Provide an Accurately Calibrated Signal at the Test Frequencies as Listed.

Output Indicating Meter, Non-Metallic Screwdriver, Dummy Antennas — .1 mf, and 50 mmf.

SIGNAL GENERATOR					
FREQUENCY SETTING	CONNECTION AT RADIO	GROUND CONNECTION	DUMMY ANTENNA	GANG CONDENSER SETTING	ADJUST TUNING SLUGS AND TRIMMERS
455 KC	Control Grid 1st 6BA6 Pin No. 1	Chassis Base	.1 mf	Turn Rotor to Full Open	2nd I.F. C-14 & C-17
455 KC	Control Grid 6BE6 Pin No. 7 1st Det.	Same as above	.1 mf	Turn Rotor to Full Open	1st I.F. Pri. & Sec.
1620 KC	Control Grid 6BE6 Pin No. 7	Same as above	.1 mf	Turn Rotor to Full Open	Oscillator C-39
1400 KC	External Antenna Lead	Same as above	50 mmf	Turn Dial to 1400 KC. See Note A	Antenna C-35

NOTE A—Set pointer at the 1400 KC mark on the dial scale. Attach pointer to drive cord.

FM STAGES

Allow chassis and signal generator to warm up for several minutes. The following equipment is required for aligning:

An accurately calibrated signal generator providing unmodulated signals at the test frequencies listed below.

Non-metallic screwdriver.

Dummy Antennas and I-F Loading Resistor—.01 mf, 300 ohms and 100 K ohms.

Zero center scale DC vaccum tube voltmeter having a range of approximately 3 volts.

(If a zero center scale meter is not available, a standard scale vacuum tube voltmeter may be used by reversing the meter connections for negative readings.)

	SIGNAL GENERATOR					
	FREQUENCY SETTING	CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUSTMENT FOR MAX. METER DEFLECTION
Discriminator	10.7 MC	6BA6 2nd I-F Pin 1 & Chassis	.01 mf	FM	Rotor to Full Open	Disc. Pri. Note A
	10.7 MC	Same as above	.01 mf	FM	Same as above	Disc. Sec. Note B
	10.7 MC	Same as above	.01 mf	FM	Same as above	Disc. Pri. Note A
	10.7 MC	Same as above	.01 mf	FM	Same as above	Disc. Sec. Note B
I-F	10.7 MC Note E	6BA6 1st IF Pin 1 & Chassis	.01 mf	FM	Same as above	2nd I-F Note C
	10.7 MC	Unsolder lead from Pin 7 to band switch. Insert 100K ohm resistor between Pin 7 & Ground and feed signal into Pin 7 of 6BE6	.01 mf	FM	Same as above	1st I-F Pri. Note C
	10.7 MC	Same as above	.01 mf	FM	Same as above	1st I-F Sec. Note C
	RECHECK I-F ADJUSTMENTS IN ORDER GIVEN					
Ant. & Osc.	108.5 Note D	Disconnect dipole antenna and connect generator to dipole terminals with resistor in series.	300 ohms	FM	Rotor to Full Open	Osc. C-38
	104.5	Same as above	300 ohms	FM	Tune rotor for max. AVC voltage	Ant. C-37
	RECHECK ANTENNA & OSC. ADJUSTMENTS IN ORDER GIVEN					

FM ALIGNMENT NOTES

NOTE A—The zero center scale DC vacuum tube voltmeter is to be connected between chassis ground and the AVC line. A signal of .1 volt must be fed into the receiver for this adjustment.
Note output voltage on the zero center DC vacuum tube voltmeter.

NOTE B—Disconnect zero center DC vacuum tube voltmeter from AVC and connect it to the audio takeoff point at the 27 K ohm resistor (R-11) and its junction with the terminal strip. Adjust for zero voltage indication.

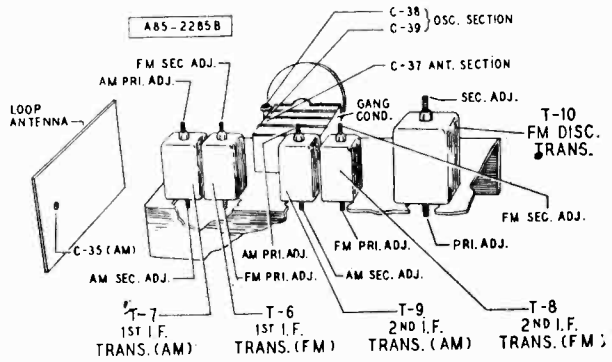
NOTE C—Connect zero center DC vacuum tube voltmeter as in Note A. Adjust input to give same output on the zero center DC vacuum tube voltmeter as in Note A.

NOTE D—Remove the 100 K ohm load resistor and solder the lead from pin 7 of 6BE6 tube to the band switch before attempting to check the antenna and oscillator adjustments.

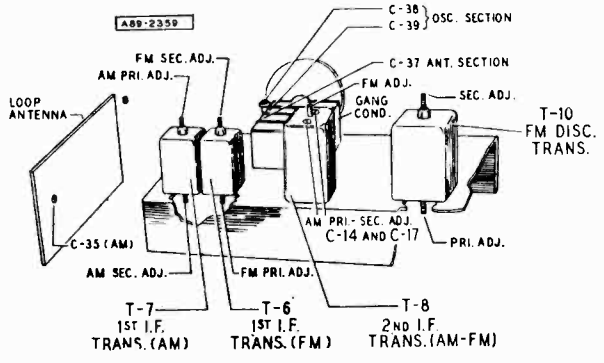
NOTE E—2nd I-F Trimmers (AM) must be aligned before attempting to adjust 2nd I-F (FM) tuning slug.

MODELS D1836A, D1836B, D1836C

WESTERN AUTO SUPPLY CO.



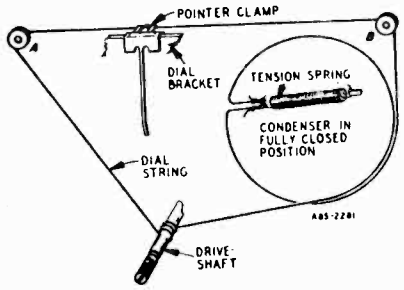
MODEL D1836A
MODEL D1836B



MODEL D1836C

DRIVE CORD REPLACEMENT

Replacement of the drive cord may be accomplished as shown in the illustration. For this purpose use the new drive cord assembly listed in the Replacement Parts List. Turn the gang condenser until the plates are fully meshed. Then install the string as shown, winding three turns clockwise around the tuning shaft with the turns progressing away from the chassis. After the cord is installed, rotate the tuning shaft several times in order to take up any slack in the cord.



REMOVAL OF CHASSIS FROM CABINET

Before removing the chassis from the cabinet it will be necessary to detach the dial pointer from the dial string. To do this, spread the tabs on the pointer and pull the dial string off the pointer.

The dial lamp socket assembly may be disengaged from the cabinet mounting by squeezing together and pulling away from the cabinet mounting, the spring bracket to which the dial lamp socket is mounted. Take care not to bend or damage the large drive pulley on the gang condenser while doing this.

When replacing the chassis in the cabinet it will be necessary to tune in a station of a known frequency and move the dial pointer until that frequency is indicated on the dial and then attach the pointer to the dial string. Take care not to scuff or cut the dial string or bend the pointer during this operation.

ELECTRICAL SPECIFICATIONS

Power Consumption—
117 volts AC 60 watts

Power Output—
4.5 watts maximum
2.5 watts 10% distortion

Speaker—12" PM dynamic

Frequency Ranges—
Broadcast 540-1600 KC
Frequency Modulation 88-108 MC

Intermediate Frequency—
AM 455 KC — FM 10.7 MC

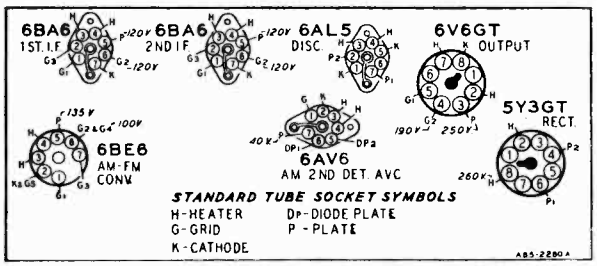
Selectivity — AM — 50 KC broad at 1000 times signal, measured at 1000 KC

I.F. FM—200 KC broad at 2 times down

I.F. FM—700 KC broad at 200 times down

AM Sensitivity—(For .5 watt output with external antenna)
20 microvolts average

FM Sensitivity—(For .5 watt output)
200 microvolts average



Use only No. 51 dial lamps.

TUBE SOCKET VOLTAGES

Socket voltages are shown on the Bottom Socket diagram at the tube socket terminals. All voltages are between the socket terminal and chassis ground. Plate, screen and cathode voltages were taken with a 1000 ohm-per-volt meter with a 300 volt scale used for plate and screen voltages. Audio grid voltages were read with a vacuum tube volt-meter. Conditions of measurement are:

Line voltage .....117 Volts AC
Signal Input .....None
A Variation of ±10% is usually permissible.

WESTERN AUTO SUPPLY CO. MODEL D1836A

NOTICE: There is a model number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information on this label.

MISCELLANEOUS

12A486	12" PM Speaker
2A373	Band Change Switch
3A303	Molded Octal Tube Socket
3A305	Phono Input Jack
3A304	Phono Motor Jack
3A426	Miniature Tube Socket
3A427	Miniature Tube Socket (For AM-FM Converter Tube)
10A679	Knob (Tuning)
10A680	Knob (Off-On Volume)
10A681	Knob (Tone)
10A682	Knob (AM-FM Phono)
13X546	Line Cord and Plug
30X547	Line Cord Clamp
76X1	Resistor-Capacitor Combination

CAPACITORS

C-1A, C-1B, C-1C, C-1D	14A201	Gang Condenser Assembly		
C-2	47X511	100 mmf		Ceramic
C-3	47X517	47 mmf		Ceramic
C-4	47X513	5 mmf		Ceramic
C-5	47X512	10 mmf		Ceramic
C-6	47X463	47 mmf		Ceramic
C-7	D66103	.01 mf	400 V	Tubular
C-8, C-10		Part of T-7 1st I-F Trans. (AM)		
C-11		Part of T-6 1st I-F Trans. (FM)		
C-9, C-12, C-13, C-19, C-20	47X507	5000 mmf		Silvered Ceramic
C-14, C-17		Part of T-9 2nd I-F Trans. (AM)		
C-15, C-16		Part of T-8 2nd I-F Trans (FM)		
C-18A, C-18B		Part of 76X1 Resistor-Capacitor Comb.		
C-21, C-23		Part of T-10 Discriminator Coil Assem.		
C-22	47X492	2700 mmf		Molded
C-24	47X510	470 mmf		Silvered Mica
C-25	45X361	5 mf	100 V	Dry Electrolytic
C-26A	45X359	40 mf	350 V	Dry Electrolytic
C-26B		40 mf	350 V	
C-26C		20 mf	350 V	
C-26D		20 mf	25 V	
C-27	B66503	.05 mf	200 V	Tubular
C-28	47X471	68 mmf		Molded
C-29	B66403	.04 mf	200 V	Tubular
C-30	D66502	.005 mf	400 V	Tubular
C-31	47X468	220 mmf		Ceramic
C-32	D66203	.02 mf	400 V	Tubular
C-33	B66402	.004 mf	200 V	Tubular
C-34	H66102	.001 mf	800 V	Tubular
C-35	17A235	2-24 mmf		Trimmer
C-36, C-37, C-39		Part of C-1 Gang Condenser		
C-38	17A247	3-12 mmf		Trimmer
C-40	47X508	500 mmf		Ceramic

RESISTORS

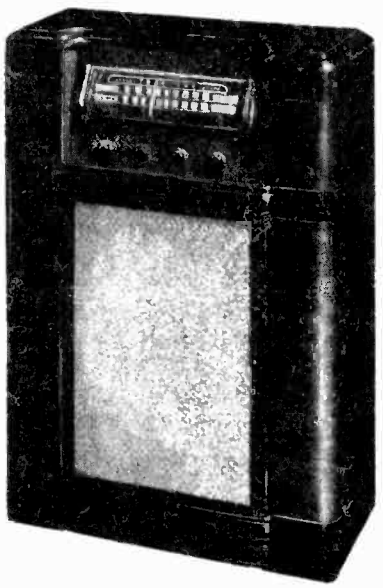
		Ohms	Watts	
R-1	B84223	22 K	.5	Carbon
R-2	B83392	3900	.5	Carbon
R-3, R-6	B84122	1200	.5	Carbon
R-4	D84822	8200	2.0	Carbon
R-5, R-9	B83680	68	.5	Carbon
R-7	B85225	2.2 meg	.5	Carbon
R-8		47 K		Part of 76X1 Resistor-Capacitar Combination
R-10	B84102	1000	.5	Carbon
R-11	B84273	27 K	.5	Carbon
R-12, R-13	B84682	6800	.5	Carbon
R-14	B85105	1 meg	.5	Carbon
R-15A	43X224	1400	6.0	Wire
R-15B		1000	4.0	Wound
R-16, R-21, R-23	B85474	470 K	.5	Carbon
R-17	B84153	15 K	.5	Carbon
R-18	36X371	.5 meg		Volume Control & Switch
R-19	B85106	10 meg	.5	Carbon
R-20	40X284	3 meg		Tone Control
R-24	B84271	270	.5	Carbon

TRANSFORMERS AND COILS

T-1	26A478	"B" Range Loop Antenna Assembly
T-2	9A1962	Di-Pole Antenna Assembly
T-3	9A1956	Antenna Coil Assembly
T-4	9A1938	Oscillator Coil (FM)
T-5	9A1929	Oscillator Coil (AM)
T-6	9A1932	1st I.F. Transformer (FM)
T-7	9A1934	1st I.F. Transformer (AM)
T-8	9A1933	2nd I.F. Tronsformer (FM)
T-9	9A1935	2nd I.F. Transformer (AM)
T-10	9A1936	Discriminotor Coil Assembly
T-11	53X290	Power Transformer
T-12	51X134	Output Transformer
L-1, L-3	9A1882	Choke Assembly
L-2	9A1940	Parasitic Choke

DIAL AND DRIVE ASSEMBLY

15X229	Pointer
6X21	Rubber Grammet } Mtg. Gang Condenser
20X260	Condenser Cushion Stud }
58X697	Dial
28X113	Drive Cord Tension Spring
26X507	Drive Shaft
19X192	"C" Washer (For drive shaft)
10X66	Drive Cord Assembly
7A215	Pilot Light Socket Assembly
7A32	No. 51 Pilot Light
25X1491	Pointer Bracket
4X915	Escutcheon (Right)
4X916	Escutcheon (Left)
30X517	Dial Clamp
25X1571	Idler Bracket
4X931	Escutcheon Inserts



MODELS D1836A, D1836B, D1836C

REPLACEMENT PARTS LIST

NOTICE: There is a Model Number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

12A486	12" PM Speaker
2A373	Band Change Switch
3A303	Molded Octal Tube Socket
3A304	Phono Motor Jack
3A305	Phono Input Jack
3A426	Miniature Tube Socket
3A427	Miniature Tube Socket (For AM-FM Converter Tube)
10A691	Knob (Tuning)
10A692	Knob (Off-On Volume)
10A693	Knob (Tone)
10A694	Knob (AM-FM Phono)
13X546	Line Cord and Plug
30X547	Line Cord Clamp
76X1	Resistor-Capacitor Combination

CAPACITORS

C-1A, C-1B, C-1C, C-1D	14A204	Gang Condenser Assembly		
C-2	47X511	100 mmf		Ceramic
C-3	47X517	47 mmf		Ceramic
C-4	47X523	10 mmf		Ceramic
C-5	47X512	10 mmf		Ceramic
C-6	47X476	100 mmf		Molded Mica
C-7	D66103	.01 mf	400 V	Tubular
C-8, C-10		Part of T-7 1st I-F Trans. (AM)		
C-11		Part of T-6 1st I-F Trans. (FM)		
C-9, C-12, C-13, C-19, C-20	47X507	5000 mmf		Silvered Ceramic
C-14, C-17		Part of T-9 2nd I-F Trans. (AM)		
C-15, C-16		Part of T-8 2nd I-F Trans (FM)		
C-18A, C-18B		Part of 76X1 Resistor-Capacitor Comb.		
C-23		Part of T-10 Discriminator Coil Assem.		
C-22	47X492	2700 mmf		Molded
C-24	47X510	470 mmf		Silvered Mica
C-25	45X361	5 mf	100 V	Dry Electrolytic
C-26A	45X359	40 mf	350 V	Dry Electrolytic
C-26B		40 mf	350 V	
C-26C		20 mf	350 V	
C-26D		20 mf	25 V	
C-27	B66503	.05 mf	200 V	Tubular
C-28	47X471	68 mmf		Molded
C-29	B66403	.04 mf	200 V	Tubular
C-30	D66502	.005 mf	400 V	Tubular
C-31	47X468	220 mmf		Ceramic
C-32	D66203	.02 mf	400 V	Tubular
C-33	B66402	.004 mf	200 V	Tubular
C-34	H66102	.001 mf	800 V	Tubular
C-35	17A235	2-24 mmf		Trimmer
C-37, C-39		Part of C-1 Gang Condenser		
C-38	26A489	1-8 mmf		Trimmer Assembly
C-40	47X508	500 mmf		Ceramic
C-42	47X521	6 mmf		Ceramic
C-43	47X522	12 mmf		Ceramic

RESISTORS

		Ohms	Watts	
R-1	B84223	22 K	.5	Carbon
R-2	B83392	3900	.5	Carbon
R-3, R-6	B84122	1200	.5	Carbon
R-4	D84822	8200	2.0	Carbon
R-5, R-9	B83680	68	.5	Carbon
R-7	B85225	2.2 meg	.5	Carbon
R-8		47 K		Part of 76X1 Resistor-Capacitor Combination
R-10	B84102	1000	.5	Carbon
R-11	B84273	27 K	.5	Carbon
R-12, R-13, R-17	B84153	15 K	.5	Carbon
R-14	B85105	1 meg	.5	Carbon
R-15A	43X224	1400	6.0	Wire
R-15B		1000	4.0	Wound
R-15, R-21, R-23	B85474	470 K	.5	Carbon
R-18	36X371	.5 meg		Volume Control & Switch
R-19	B85106	10 meg	.5	Carbon
R-20	40X284	3 meg		Tone Control
R-24	B84271	270	.5	Carbon

TRANSFORMERS AND COILS

T-1	26A478	"B" Range Loop Antenna Assembly
T-2	9A1962	Dipole Antenna Assembly
T-3	9A1956	Antenna Coil Assembly
T-4	9A1938	Oscillator Coil (FM)
T-5	9A1929	Oscillator Coil (AM)
T-6	9A1932	1st I.F. Transformer (FM)
T-7	9A1934	1st I.F. Transformer (AM)
T-8	9A1969	2nd I.F. Transformer (FM)
T-9	9A1935	2nd I.F. Transformer (AM)
T-10	9A1970	Discriminator Coil Assembly
T-11	53X290	Power Transformer
T-12	51X134	Output Transformer
C-1, L-3	9A1882	Choke Assembly
L-2	9A1940	Parasitic Choke
L-4	9A1967	Parasitic Choke

DIAL AND DRIVE ASSEMBLY

15X229	Pointer
6X21	Rubber Grommet
20X260	Condenser Cushion Stud (Mtg. Gang Condenser)
58X697	Dial
28X113	Drive Cord Tension Spring
26X507	Drive Shaft
19X192	"C" Washer (For drive shaft)
10X66	Drive Cord Assembly
7A215	Pilot Light Socket Assembly
7A32	No. 51 Pilot Light
25X1491	Painter Bracket
4X915	Escutcheon (Right)
4X916	Escutcheon (Left)
30X517	Dial Clamp
25X1571	Idler Bracket
4X931	Escutcheon Inserts

REPLACEMENT PARTS LIST

NOTICE: There is a Model Number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

12A486	12" PM Speaker	
2A373	Band Change Switch	
3A303	Molded Octal Tube Socket	
3A304	Phono Motor Jack	
3A305	Phono Input Jack	
3A426	Miniature Tube Socket	
3A427	Miniature Tube Socket (For AM-FM Converter Tube)	
10A691	Knob (Tuning)	
10A692	Knob (Off-On Volume)	
10A693	Knob (Tone)	
10A694	Knob (AM-FM Phono)	
13X546	Line Cord and Plug	
30X547	Line Cord Clamp	

CAPACITORS

C-1A, C-1B, C-1C, C-1D	14A204	Gang Condenser Assembly		
C-2	47X511	100 mmf		Ceramic
C-3	47X517	47 mmf		Ceramic
C-4	47X523	10 mmf		Ceramic
C-5	47X512	10 mmf		Ceramic
C-6	47X476	100 mmf		Molded
C-7	D66103	.01 mf	400 V	Tubular
C-8, C-10		Part of T-7 (1st I-F Trans. AM)		
C-11		Part of T-6 (1st I-F Trans. FM)		
C-9, C-12, C-13 C20	47X507	5000 mmf		Silvered Ceramic
C-14, C-17		Part of T-8 (2nd I-F Trans AM-FM)		
C-16	47X463	47 mmf		Ceramic
C-18A, C-18B	47X112	50-50 mmf		Dual Mica
C-22	47X492	2700 mmf		Molded
C-23		Part of T-10 (Discriminator Coil Assem.)		
C-24	47X529	330 mmf		Silvered Mica
C-25	45X361	5 mf	100 V	Dry Electrolytic
C-26A	45X359	40 mf	350 V	Dry Electrolytic
C-26B		40 mf	350 V	
C-26C		20 mf	350 V	
C-26D		20 mf	25 V	
C-27	B66503	.05 mf	200 V	Tubular
C-28	47X471	68 mmf		Molded
C-29	B66403	.04 mf	200 V	Tubular
C-30	D66502	.005 mf	400 V	Tubular
C-31	47X468	220 mmf		Ceramic
C-32	D66203	.02 mf	400 V	Tubular
C-33	B66402	.004 mf	200 V	Tubular
C-34	H66102	.001 mf	800 V	Tubular
C-35	17A235	2-24 mmf		Trimmer
C-37, C-39		Part of C-1 Gang Condenser		
C-38	26A489	1-8 mmf		Trimmer Assembly
C-40	47X508	500 mmf		Ceramic
C-42	47X521	6 mmf		Ceramic
C-43	47X522	12 mmf		Ceramic

RESISTORS

		Ohms	Watts	
R-1	B84223	22 K	.5	Carbon
R-2	B83392	3900	.5	Carbon
R-3, R-6	B84122	1200	.5	Carbon
R-4	D84822	8200	2.0	Carbon
R-5	B83680	68	.5	Carbon
R-7, R-9	B85225	2.2 meg	.5	Carbon
R-8	B85473	47 K	.5	Carbon
R-10	B84102	1000	.5	Carbon
R-11	B84273	27 K	.5	Carbon
R-12, R-13, R-17	B84153	15 K	.5	Carbon
R-14	B85105	1 meg	.5	Carbon
R-15A	43X224	1400	6.0	Wire
R-15B		1000	4.0	Wound
R-16		Part of T-8 (2nd I-F Trans. AM-FM)		
R-18	36X371	.5 meg		Volume Control & Switch
R-19	B85106	10 meg	.5	Carbon
R-20	40X284	3 meg		Tone Control
R-21, R-23	B85474	470 K	.5	Carbon
R-22, R-26	43X233	3.6	.5	Wire Wound
R-24	B84271	270	.5	Carbon
R-25	B84681	680	.5	Carbon

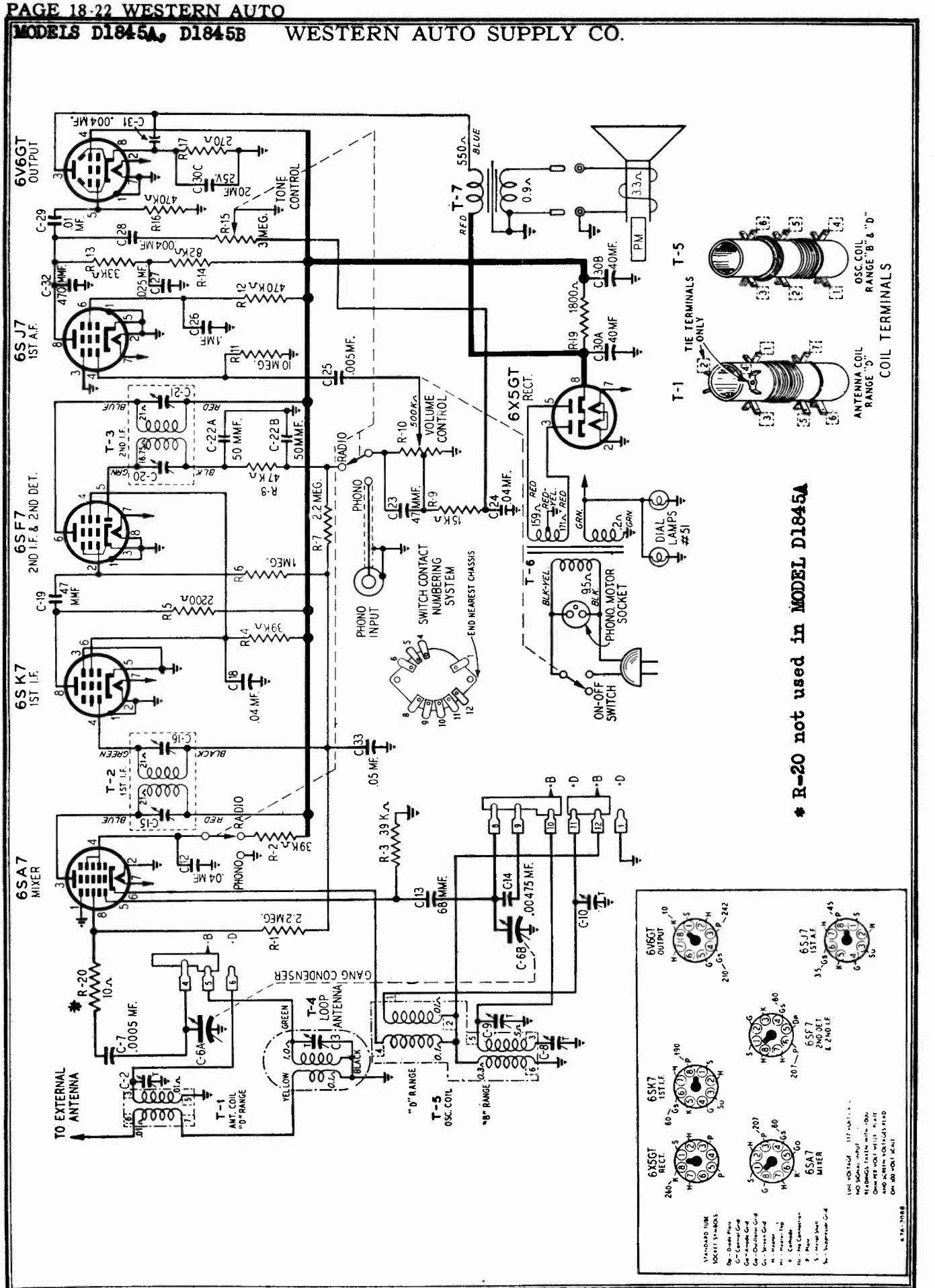
TRANSFORMERS AND COILS

T-1	26A478	"B" Range Loop Antenna Assembly
T-2	9A1962	Dipole Antenna Assembly
T-3	9A1956	Antenna Coil Assembly
T-4	9A1938	Oscillator Coil (FM)
T-5	9A1929	Oscillator Coil (AM)
T-6	9A1932	1st I.F. Transformer (FM)
T-7	9A1934	1st I.F. Transformer (AM)
T-8	9A1973	2nd I.F. Transformer (AM-FM)
T-10	9A1970	Discriminator Coil Assembly
T-11	53X290	Power Transformer
T-12	51X134	Output Transformer
L-1, L-3	9A1882	Choke Assembly
L-2	9A1940	Parasitic Choke

DIAL AND DRIVE ASSEMBLY

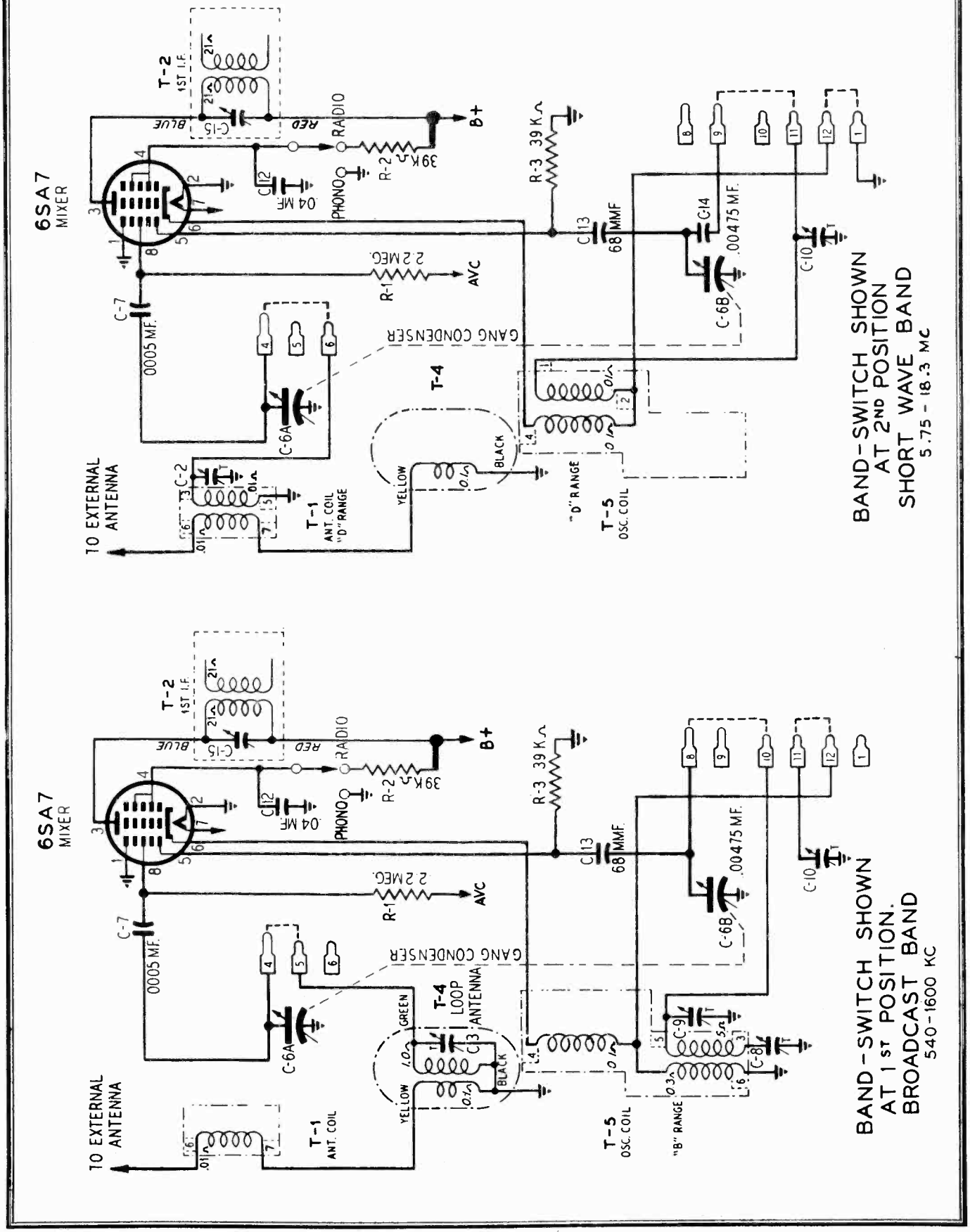
15X229	Pointer	
6X21	Rubber Grommet	Mtg. Gang Condenser
20X260	Condenser Cushion Stud	Mtg. Gang Condenser
58X697	Dial	
28X113	Drive Cord Tension Spring	
26X507	Drive Shaft	
19X192	"C" Washer (For drive shaft)	
10X66	Drive Cord Assembly	
7A215	Pilot Light Socket Assembly	
7A32	No. 51 Pilot Light	
25X1491	Pointer Bracket	
4X915	Escutcheon (Right)	
4X916	Escutcheon (Left)	
30X517	Dial Clamp	
25X1571	Idler Bracket	
4X931	Escutcheon Inserts	

MODELS D1845A, D1845B WESTERN AUTO SUPPLY CO.



RECORD CHANGER: Oak Model 6666, RCD.CH. 15-1

WESTERN AUTO SUPPLY CO. MODELS D1845A, D1845B



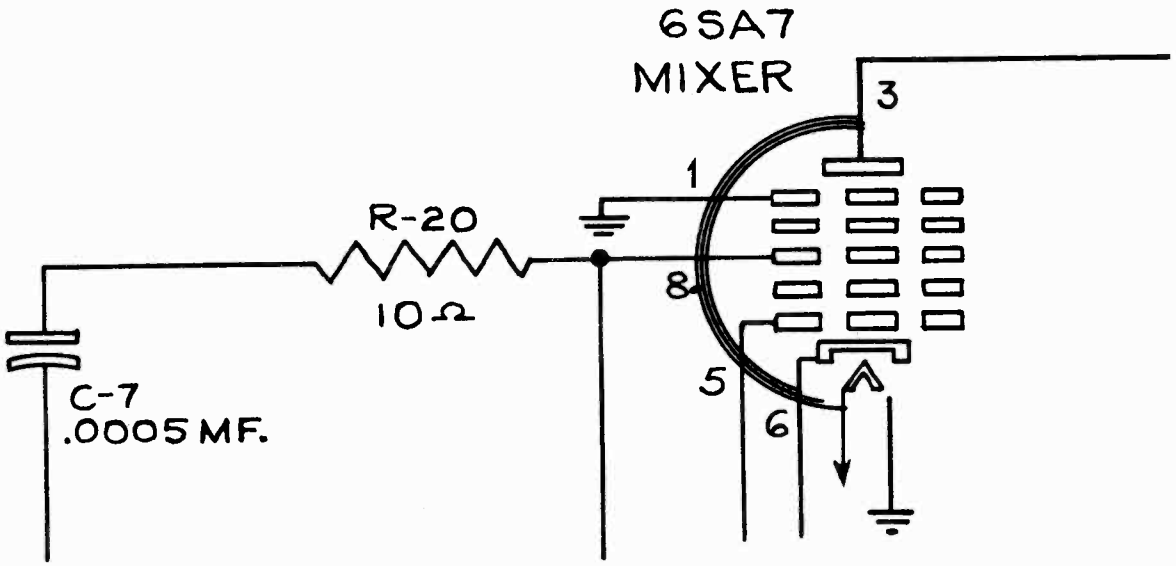
SUPPLEMENTARY SERVICE DATA

TRUETONE MODEL D1845B

A resistor has been added to the circuit to eliminate parasitics in the 6SA7 tube.

Ref. No.	Part No.		Description
R-20	B85100	10 ohm	carbon

The addition is shown in the partial schematic below:



ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

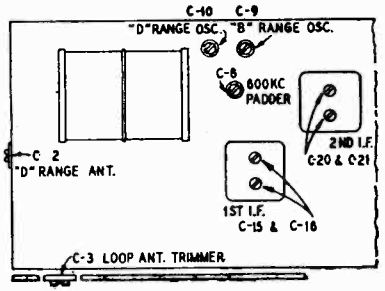
Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning: An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output Indicating Meter—Non-Metallic Screwdriver.

Dummy Antennas—.1 mf., 50 mmf., and 400 ohms.

	SIGNAL GENERATOR FREQUENCY SETTING	SIGNAL GENERATOR CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
I.F.	455 KC	Grid of 6SA7 Pin 8	.1 mf.	B Range	Turn Rotor to Full Open	1st I.F. (C15) & (C16) 2nd I.F. (C20) & (C21)
RANGE B	1620 KC	Antenna Lead	50 mmf.	B Range	Turn Rotor to Full Open	Oscillator Range B (C9)
	1400 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output	Ant. Range B (C3)
	600 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output	600 KC (C8) See Note B
	Repeat above steps at 1620 and 600 KC until readjusting the oscillator Range B Trimmer (C9) causes no further improvement in output.					
RANGE D	18.3 MC	Antenna Lead	400 Ohm	D Range	Turn Rotor to Full Open	Oscillator Range D (C10)
	16 MC	Antenna Lead	400 Ohm	D Range	Tune Rotor to Max. Output	Ant. Range D (C2) Rock Rotor—See Note B
LOOP RANGE B	Reassemble chassis in cabinet. 1400 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output See Note A	Ant. Range B (C3)



NOTE A—Set pointer at the 1400 KC mark on the dial scale. Attach pointer to drive cord.

NOTE B—Turn rotor back and forth and adjust the trimmer until peak of greatest intensity is obtained.

REMOVAL OF CHASSIS FROM CABINET

Before removing the chassis from the cabinet it will be necessary to detach the dial pointer from the dial string. To do this, spread the tabs on the pointer and pull the dial string off the pointer.

The dial lamp socket assemblies may be disengaged from the cabinet mounting by squeezing together and pulling away from the cabinet mounting, the spring bracket to which the dial lamp socket is mounted. Take care not to bend or damage the large drive pulley on the gang condenser while doing this.

When replacing the chassis in the cabinet it will be necessary to tune in a station of a known frequency and move the dial pointer until that frequency is indicated on the dial and then attach the pointer to the dial string. Take care not to scuff or cut the dial string or bend the pointer during this operation.

MISCELLANEOUS

12A477	8" P.M. Speaker
3A303	Tube Socket—Octal (8 prong) Moulded
3A304	Phono Motor Socket
3A305	Phono Socket—Single Pin Tip
10A689	Knob (Tuning)
10A690	Knob (Off-On Volume)
10A687	Knob (SW-BC)
10A688	Knob (Tone—R.P.)
2A372	Band Change Switch
13X328	Line Cord and Plug Assembly No. 750 Phono-Console Cabinet

TRANSFORMERS AND COILS

T-1	9A1917 "D" Range Antenna Coil Assembly
T-2	9A1814 1st I-F Coil Assembly
T-3	9A1815 2nd I-F Coil Assembly
T-4	26A442 "B" Range Loop Antenna
T-5	9A1918 Oscillator Coil Assembly
T-6	53X282 Power Transformer
T-7	51X134 Output Transformer

DIAL AND DRIVE ASSEMBLY

6X21, 20X329	Rubber Grommet, Cond. Cushion Stud } Mtg. Gang Condenser
25X1489	Pulley Bracket (Right)
25X1490	Pulley Bracket (Left)
26X485	Drive Shaft
19X192	"C" Washer
25X1491	Pointer Bracket
15X229	Pointer
10X66	Drive Cord Assembly
28X113	Drive Cord Tension Spring
30X517	Dial Clamp
4X915	Escutcheon, Dial (Right)
4X916	Escutcheon, Dial (Left)
4X931	Escutcheon Insert
58X694	Dial Glass
7A200	Pilot Light Socket Assembly
7A32	Pilot Light Bulb No. 51

CAPACITORS

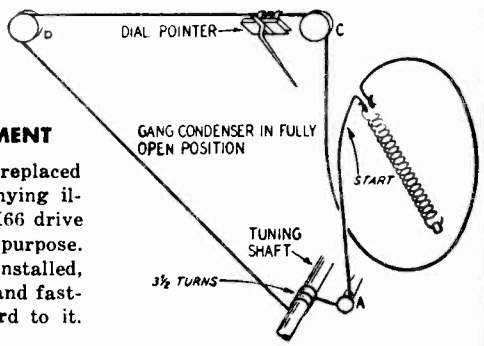
C-2	17A164	5-50 mmf		Trimmer
C-3	17A235	2-24 mmf		Trimmer
C-6A, C-6B	14A184	Gang Condenser with Drive Pulley		
C-7	B66501	.0005 mf	200 V	Tubular
C-8	17A155	350-430 mmf		Trimmer
C-9, C-10	17A109	2.5-35 mmf		Dual Trimmer
C-12, C-18	D66403	.04 mf	400 V	Tubular
C-13	47X466	68 mmf		Moulded
C-14	46X289	.00475 mf	180 V	Tubular
C-15, C-16	Part of T-2 (1st I-F Coil Assembly)			
C-19, C-23	47X463	47 mmf		Moulded
C-20, C-21	Part of T-3 (2nd I-F Coil Assembly)			
C-22A, C-22B	47X112	50-50 mmf		Dual Mica
C-24	D64403	.04 mf	400 V	Tubular
C-25	D66502	.005 mf	400 V	Tubular
C-26	D67104	.10 mf	400 V	Tubular
C-27	D64253	.025 mf	400 V	Tubular
C-28	D66402	.004 mf	400 V	Tubular
C-29	D66103	.01 mf	400 V	Tubular
C-30A	45X346	40 mf	450 V	3 Section Electrolytic
C-30B		40 mf	450 V	
C-30C		20 mf	25 V	
C-31	H66402	.004	800 V	Tubular
C-32	47X467	470 mmf		Moulded
C-33	B66503	.05 mf	200 V	Tubular

RESISTORS

B85225	R-1, R-7	2.2 megohms	0.5 W	Carbon
C84393	R-2, R-4	39 K ohms	1.0 W	Carbon
B84393	R-3	39 K ohms	0.5 W	Carbon
B84222	R-5	2200 ohms	0.5 W	Carbon
B85105	R-6	1 megohm	0.5 W	Carbon
B85473	R-8	47 K ohms	0.5 W	Carbon
B84153	R-9	15 K ohms	0.5 W	Carbon
36X358	R-10	500 K ohms	Volume Control and Line Switch	
B85106	R-11	10 megohms	0.5 W	Carbon
B85474	R-12, R-16	470 K ohms	0.5 W	Carbon
B84333	R-13	33 K ohms	0.5 W	Carbon
B84823	R-14	82 K ohms	0.5 W	Carbon
40X276	R-15	3.0 megohms	Tone Control & Radio Phono Switch	
C84271	R-17	270 ohms	1.0 W	Carbon
D84182	R-19	1800 ohms	2.0 W	Carbon
B85100	R-20	10 ohms	0.5 W	Carbon

DRIVE CORD REPLACEMENT

The drive cord should be replaced as shown on the accompanying illustration using a new 10X66 drive cord assembly for the purpose. After the cord has been installed, stretch the tension spring and fasten the free end of the cord to it.



SPECIFICATIONS

Power Consumption (at 117 Volts AC) ..... 45 Watts (normal) 70 Watts (phono operating)

Power Output ..... 4 Watts, Maximum 2.3 Watts, 10% Harmonics

Tuning Frequency Range

B Range ..... 540-1600 Kilocycles

D Range ..... 5.75-18.3 Megacycles

Speaker ..... 8" PM Dynamic

Intermediate Frequency ..... 455 KC

Selectivity ..... 40 KC Broad at 1000 Times Signal

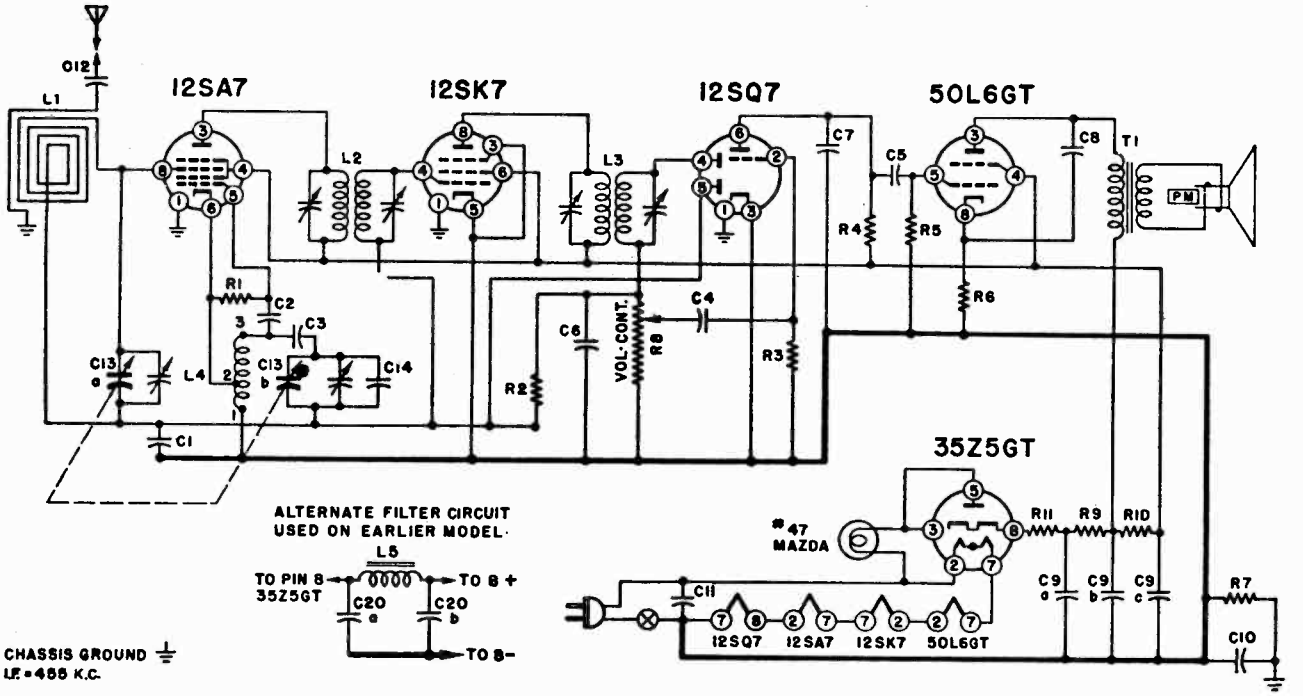
Sensitivity (For 0.5 Watt Output, with External Antenna)

B Range ..... 9 Microvolts Average

D Range ..... 20 Microvolts Average

MODEL D2622

WESTERN AUTO SUPPLY CO.



CONDENSERS

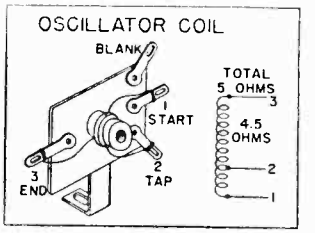
Symbol	Capacity		Type
C1	.1	mfd.	200 V.
C2	.00005	mfd.	Mica
C3	.02	mfd.	400 V.
C4	.01	mfd.	400 V.
C5	.01	mfd.	400 V.
C6	.00025	mfd.	Mica
C7	.0005	mfd.	Mica
C8	.02	mfd.	400 V.
C9a	30.	mfd.	(Elect.) 150 V.
C9b	30.	mfd.	(Elect.) 150 V.
C9c	20.	mfd.	(Elect.) 150 V.
C10	.2	mfd.	400 V.
C11	.05	mfd.	400 V.
C12	.005	mfd.	600 V.
C13a	.00042	mfd.	(max.) Var.
C13b	.00018	mfd.	(max.) Var.
C14	.00002	mfd.	Mica
C20a	30.	mfd.	(Elect.) 150 V.
C20b	50.	mfd.	(Elect.) 150 V.

RESISTORS

Symbol	Resistance	Type
R1	22,000 ohms	C½W
R2	470,000 ohms	C½W
R3	10 megohms	C½W
R4	220,000 ohms	C½W
R5	470,000 ohms	C½W
R6	150 ohms	C½W
R7	150,000 ohms	C½W
R8	1 megohm	Volume Control
R9	150 ohms	C1W
R10	1,000 ohms	C1W
R11	33 ohms	C1W

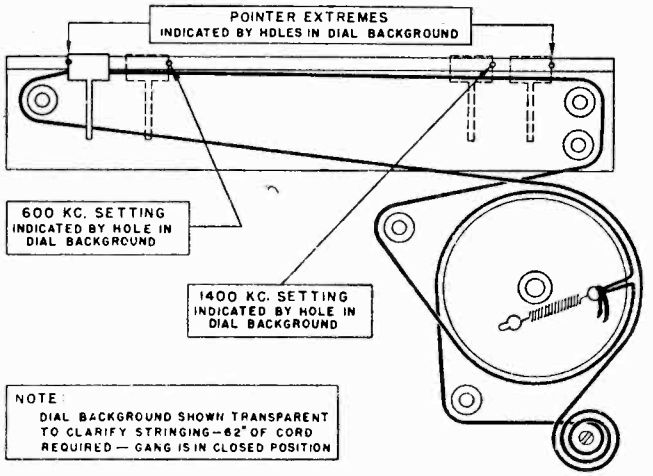
COILS

Symbol	Description
L1	Loop
L2	1st I. F. Trans.
L3	2nd I. F. Trans.
L4	Osc. Coil
L5	Choke, Filter



TUNING RANGE
540KC.- 1630KC.

DIAL STRINGING AND POINTER SETTINGS:—



POWER SUPPLY:—

110-120 Volts A.C. or D.C. U.L. approved.
Frequency—50 to 60 cycles.
Power consumption—30 watts.

Step	Dummy Antenna between Radio and Signal Generator	Connect Signal Generator to	Signal Generator Frequency	Gang Condenser Setting	Trimmers Adjusted for Maximum Output
1	250 mmfd. Condenser	Gang Condenser Antenna Stator	455 KC.	Rotor full open (Plates out of mesh)	C and D—2nd I.F.
2	250 mmfd. Condenser	Gang Condenser Antenna Stator	455 KC.	Rotor full open (Plates out of mesh)	A and B—1st I.F.
3	250 mmfd. Condenser	Gang Condenser Antenna Stator	1630 KC.	Rotor full open (Plates out of mesh)	E—Oscillator
4	No actual connection between set and generator.	Loop radiator (or place pickup lead from generator close to loop of set to obtain adequate signal).	1400 KC.	Set Gang to tune in Generator Signal	F—Antenna

CONDENSERS

Symbol	Description	Part No.
C1	Paper, .1 mfd. 200 V.	64B1-30
C2	Mica, 50 mmf. ±20%	65B5-11
C3	Paper, .02 mfd. 400 V.	64B1-24
C4	Paper, .01 mfd. 400 V.	64B1-25
C5	Paper, .01 mfd. 400 V.	64B1-25
C6	Mica, 250 mmf. ±20%	65B7-22
C7	Mica, 500 mmf. ±20%	65B7-27
C8	Paper, .02 mfd. 400 V.	64B1-24
C9a, C9b, C9c	Elect., 30 mfd. 150 V., Elect., 30 mfd. 150 V., Elect., 20 mfd. 150 V.	67A8
C10	Paper, .2 mfd. 400 V.	64A2-1
C11	Paper, .05 mfd. 400 V.	64B1-22
C12	Paper, .005 mfd. 600 V.	64B1-12
C13a, C13b	Gang Condenser (2 Section)	68A2
C14	Mica, 20 mmf. ±10%	65B5-5
C20a, C20b	Elect., 30 mfd. 150 V., Elect., 50 mfd. 150 V.	67A3

RESISTORS

R1	22,000 ohm ±10%, ½W.	60B8-223
R2	1 megohm ±10%, ½W.	60B8-105
R3	10 megohm ±10%, ½W.	60B8-106
R4	220,000 ohm ±10%, ½W.	60B8-224
R5	470,000 ohm ±10%, ½W.	60B8-474
R6	150 ohm ±10%, ½W.	60B8-151
R7	150,000 ohm ±10%, ½W.	60B8-154
R8	1 megohm Volume Control & Switch	75B1-6
R9	150 ohm ±10%, 1W.	60B28-1
R10	1000 ohm ±10%, 1W.	60B28-2
R11	33 ohm ±10%, 1W.	60B28-3

TRANSFORMERS AND COILS

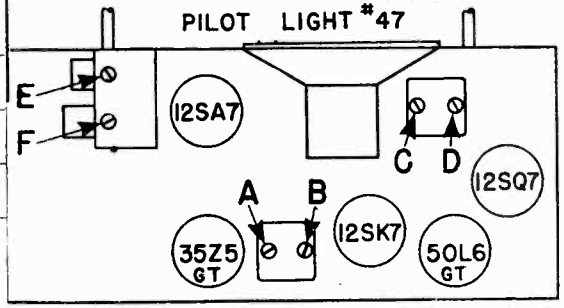
Symbol	Description	Part No.
L1	Antenna, Loop	69B4
L2	Transformer, 1st I. F.	72B3
L3	Transformer, 2nd I. F.	72B4
L4	Oscillator Coil	69A5
L5	Choke Coil (Filter)	74A1
T1	Transformer, Output	*

*When ordering, specify all numbers on speaker and transformer.

MISCELLANEOUS

Description	Part No.
Background, Dial	X22C3-1
Bracket, Loop Retainer	15A14
Buttons (Cabinet Back), Snap	13A1-2-47
Cover, Back	43B21-1
Drum and Hub Assembly	A1012
Grommet, Rubber 7/16" x 3/16" (Gang Mtg.)	12A1-2
Knob, Mahogany	33A10-2
Pilot Light #47	81A1-8
Pilot Light Socket and Leads	82A2-1
Pointer	25A4-1
Pulley, Fibre Dial	17A1-3
Scale, Dial	21B26
Shaft, Tuning	28A1-1
Socket, Octal Tube	87A10-2
Speaker (5" PM) and Output Transformer	78B4-4
Spring, Dial Cord Tension	19A1-3
Washer, Flat Fibre Insulating	5A1-6
Washer, Offset Fibre Insulating	5A2-5
Washer, C	4A4-1
Washer, Spring	4A6-3-0

TUBE & TRIMMER LOCATION



IMPORTANT—Check to see that dial pointer reaches each end of dial scale when Station Selector Control is turned from one end to the other.

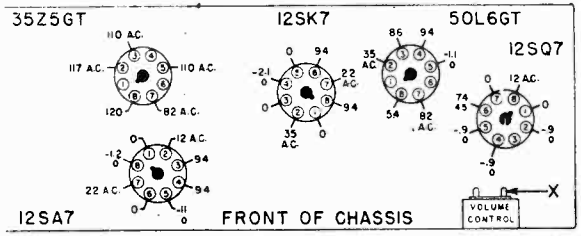
Volume control—Maximum for all adjustments.

Connect radio chassis to ground post of signal generator with a short heavy lead.

Connect output meter across voice coil of speaker.

Allow chassis and signal generator to warm up for several minutes.

Use lowest Output setting of Signal Generator capable of producing adequate Output Meter indication and then proceed in the following sequence.

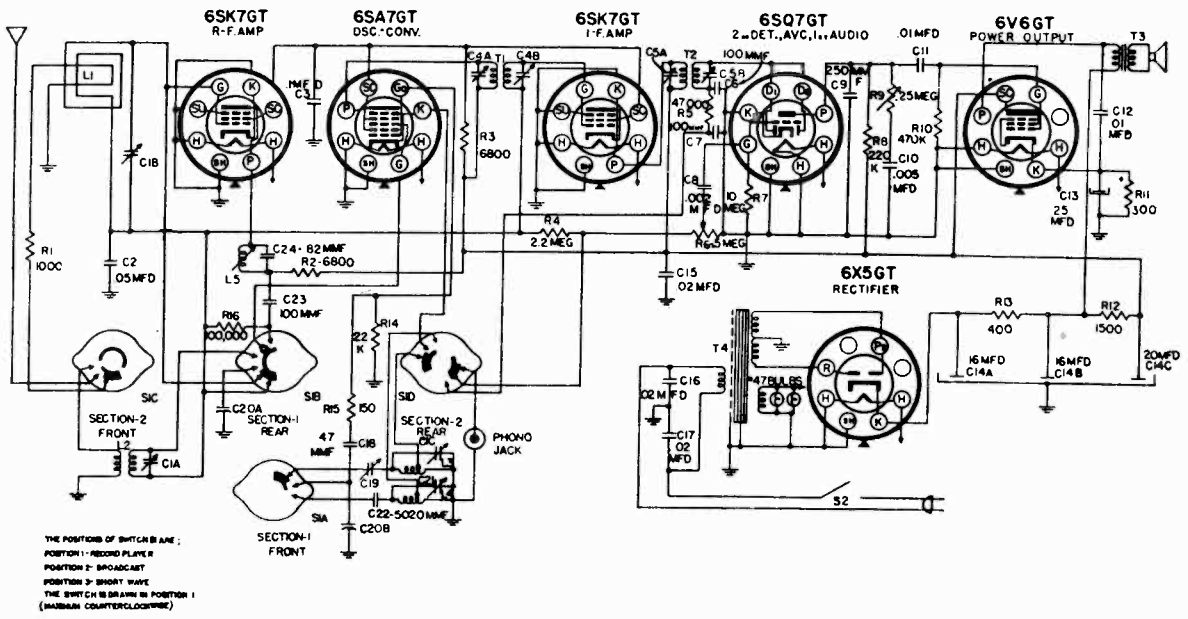


Bottom View of Chassis, Showing Voltages

All readings made between Tube Socket Terminals and Switch Lug on volume control (Point "X" on drawing).
Measured on a 117 Volt A.C. line.
Volume control full on.
Dial tuned to low frequency end, no signal.
Voltages indicated obtained on Vacuum Tube voltmeter.
A second voltage reading is shown made with a 1000 ohm-per-volt meter when use of this instrument would result in appreciably lower readings.

MODEL D2626 WESTERN AUTO SUPPLY CO.

SERVICING INFORMATION



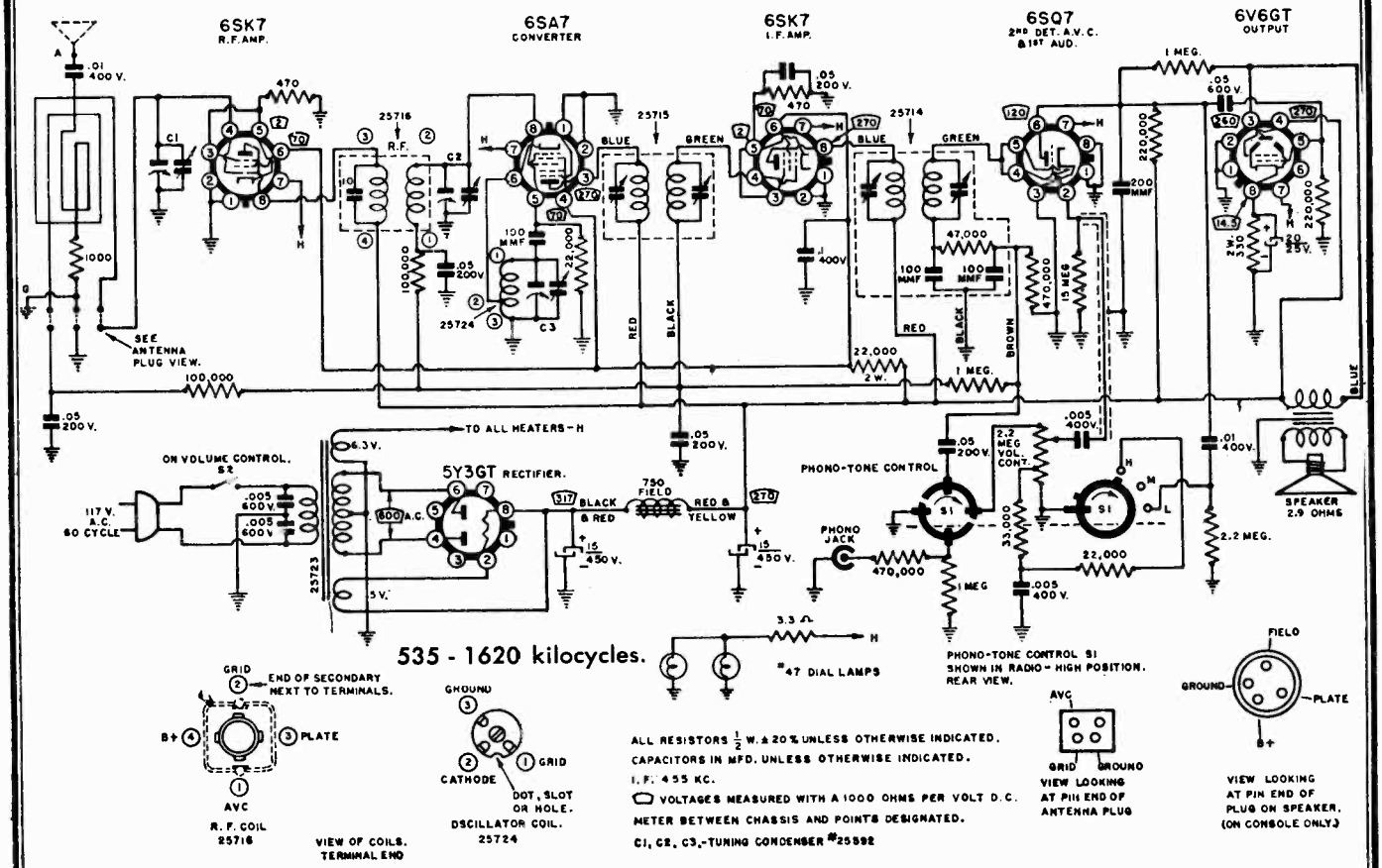
PARTS LIST

Location Schematic	Part No.	Description
	T-457-2	Cabinet
	62189	Cabinet Back
C-20	1668	Condenser, Variable
C14	A20102	Condenser, Electrolytic 20-16-16 mfd. x 350 V.
C13	20105	Condenser, Electrolytic 25 mfd. x 25 VDC.
C1	A1725	Condenser, Trimmer, 3 Section, 3-30mmfd.
C18		Condenser, Mica 47 mmfd.
C6, C7, C23		Condenser, Mica 100 mmfd.
C9		Condenser, Mica 250 mmfd.
C22		Condenser, Mica 5020 mmfd.
C24		Condenser, Mica 82 mmfd.
C2		Condenser, Paper .05 mfd. 600 V.
C3		Condenser, Paper .1 mfd. 400 V.
C8		Condenser, Paper .002 mfd. 400 V.
C10		Condenser, Paper .005 mfd. 400 V.
C11		Condenser, Paper .01 mfd. 600 V.
C12		Condenser, Paper .01 mfd. 800 V.
C15		Condenser, Paper .02 mfd. 400 V.
C16, C17	1975	Condenser, Oil filled metal case .02 mfd. 600V.
R6	2470-A	Control, Volume .5 Meg
R9	2521	Control, Tone .25 Meg with switch
		Cord, Line
L1	28170	Coil, Loop
L2	28167	Coil, S.W. Antenna

Location Schematic	Part No.	Description
L3	28169	Coil, B.C. Oscillator
L4	28168	Coil, S.W. Oscillator
L5	28175	Coil, Wave Trap
		Knob, Tone-off-on
		Knob, Volume
		Knob, Tuning
		Knob, (RP, BC, SW)
		Pilot Lamp #47
R1		Resistor, 1,000 ohms ½ W.
R2, R3		Resistor, 6,800 ohms 2 W.
R14		Resistor, 22,000 ohms ½ W.
R4		Resistor, 2.2 Megohms ½ W.
R5		Resistor, 47,000 ohms ½ W.
R7		Resistor, 10 Meg ohms ½ W.
R8		Resistor, 220,000 ohms ½ W.
R10		Resistor, 470,000 ohms ½ W.
R11		Resistor, 300 ohms 2 W. Wirewound
R12		Resistor, 1500 ohms 2 W. Wirewound
R13		Resistor, 400 ohms 2 W. Wirewound
R15		Resistor, 150 ohms ½ W. Wirewound
R16		Resistor, 100,000 ohms ½ W.
	5866	Speaker, P. M.
T1	3360	Transformer, I.F. Input
T2	3530	Transformer, I.F. Output
T3	1333	Transformer, Output
T4	1020	Transformer, Power

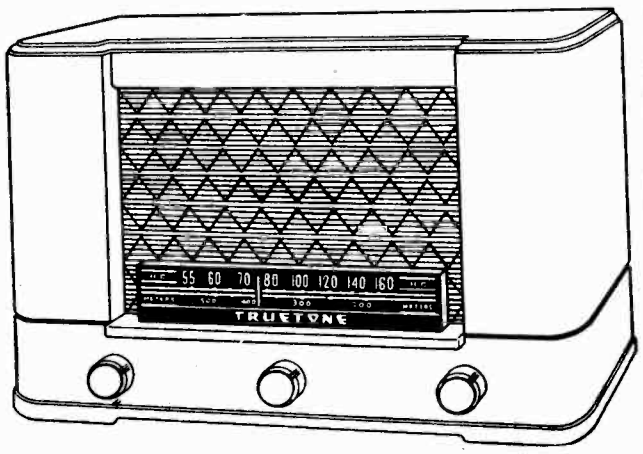
For 110-125 Volt AC Operation

WESTERN AUTO SUPPLY CO. MODEL D2634



Part No.	Description
25692	Antenna—Loop
25596	Bearings—For Wood Pulleys
25572	Bracket—Tuning Condenser—Front
25573	Bracket—Tuning Condenser—Rear
25574	Bracket—Speaker
25765	Bracket—Pointer Track
25733	Cabinet
25597	Coil—R. F.
25724	Coil—Oscillator
25688	Condenser—Filter 15-450, 15-450, 20-25
25592	Condenser—Tuning C-1, C-2, C-3
25690	Control—Volume (with AC Switch S-2)
25068	Cord—AC and Plug
25834	Cord—Dial (includes Spring and Pointer Coupling)
25752	Dial Scale—Glass
25578	Dial Pointer
25829	Knob—Tone
25696	Knob—Volume and Tuning
25710	Phono—Pick-Up Socket
25693	Plug—For Loop
25336	Pulley—Wood—Small
25819	Pulley—Manual Drive With Shaft
25607	Rubber—Grommets
25774	Screw—Set For Worm Gear (Tuning Condenser)
25576	Socket—Dial Lamp
25620	Socket—Octal
25006	Socket—For Loop
25712	Speaker—With Transformer
25562	Switch—Tone S-1,
25711	Track—Pointer
25715	Transformer—I. F. Input
25714	Transformer—I. F. Output
25713	Transformer—Output—Speaker
25723	Transformer—Power 60 Cycles

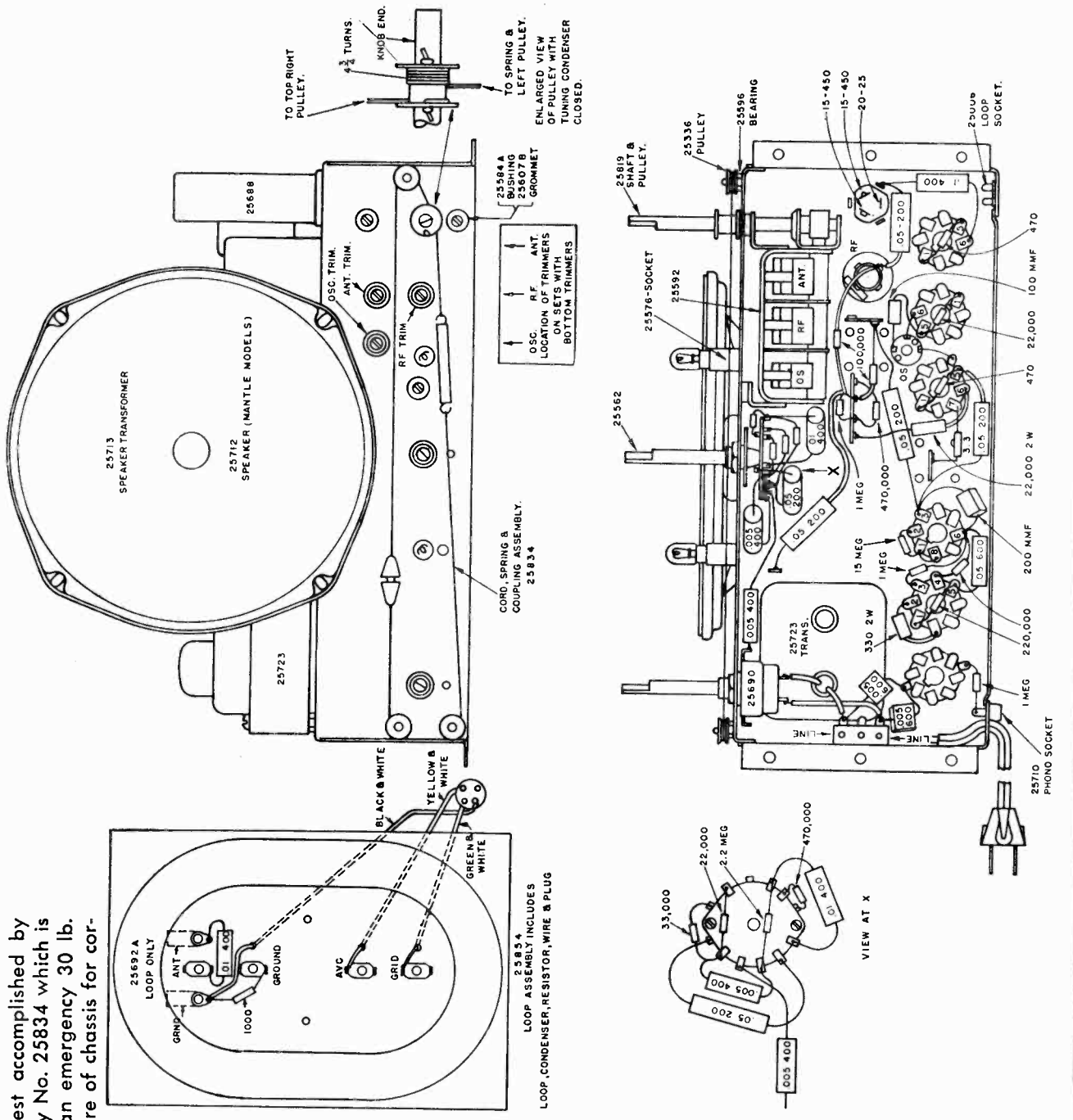
Note: Resistors and condensers not listed will be supplied on order—specify value.
We cannot supply speaker cones. We can replace or repair a damaged speaker for a nominal price if it is returned to our factory, transportation charges prepaid.



TO PROPERLY ALIGN—Remove chassis from cabinet, and align I. F. Transformers in the conventional manner with a Signal Generator adjusted to 455 KC, connected to the grid of the 6SA7 through a .1 Mfd. condenser, with the tuning condenser set at minimum capacity. To align tuning condenser, carefully place loop in normal relation to chassis, connect Signal Generator to antenna clip through a .0001 Mfd. condenser. Adjust oscillator trimmer condenser (located on left top) to 1620 KC with tuning condenser at minimum capacity (complete out of mesh). The antenna and R. F. sections are trimmed at 1400 KC. Antenna trimmer is top right; R. F. trimmer is below at right. Dial pointer may be adjusted to scale by slipping pointer coupling on dial cord.

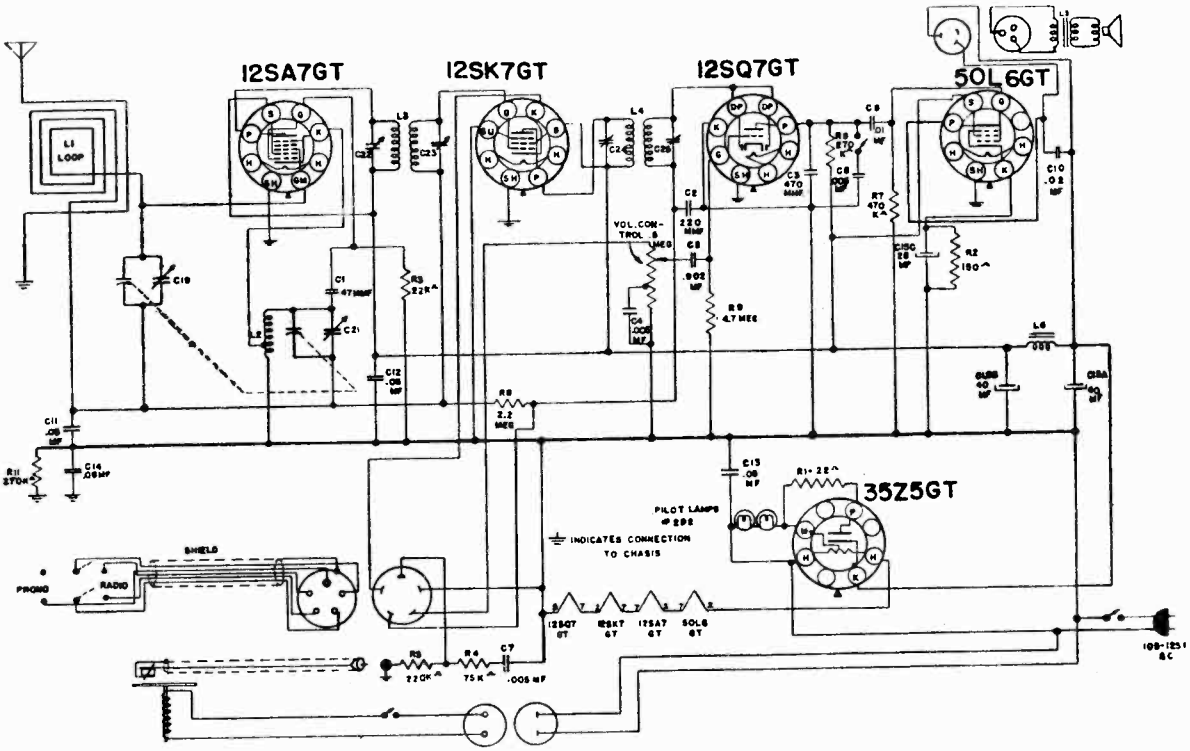
MODEL D2634

WESTERN AUTO SUPPLY CO.



DIAL CORD REPLACEMENT—Is best accomplished by replacing complete cord assembly No. 25834 which is made up to correct length. In an emergency 30 lb. fish line may be used. See picture of chassis for correct installation.

SERVICING INFORMATION



PARTS LIST

Schematic Location	Part No.	Description
	T-459	Cabinet
	62188	Back Cover
C1		Condenser, Mica 47 mmfd. 500 V.
C2		Condenser, Mica 220 mmfd. 500 V.
C3		Condenser, Mica 470 mmfd. 500 V.
C5		Condenser, Paper .002 mfd. 400 V.
C4, C7, C8		Condenser, Paper .005 mfd. 400 V.
C9		Condenser, Paper .01 mfd. 400 V.
C10		Condenser, Paper .02 mfd. 400 V.
C11, C12, C13		Condenser, Paper .05 mfd. 400 V.
C15A,B,C,	2072	Condenser, Electrolytic, 40-40 mfd. 150 V., 25 mfd. 25 V.
	1693	Condenser, Variable Air, 2 Gang
C14		Condenser, Paper .08 mfd. 400 V.
R10	2466	Control, Volume with switch .5 megohms
		Cord, Line
	28148-A	Coil, Loop
	28165	Coil, Oscillator
	3368	Choke, Filter
	39148	Knobs
		Pilot Lamp #292
R1		Resistor, 22 ohms, ½ W.
R2		Resistor, 150 ohms, ½ W.
R3		Resistor, 22K ohms, ½ W.
R4		Resistor, 75K ohms, ½ W.
R5		Resistor, 220K ohms, ½ W.
R6, R11		Resistor, 270K ohms, ½ W.
R7		Resistor, 470K ohms, ½ W.
R8		Resistor, 2.2 Megohms ½ W.
R9		Resistor, 4.7 Megohms ½ W.
	5873	Speaker and #1335 output transformer.
	3360	Transformer, 1st I. F.
	3530	Transformer, 2nd I. F.

MODEL D2663

WESTERN AUTO SUPPLY CO.

CONDENSERS

Symbol	Capacity	Type	Symbol	Capacity	Type
C1	.01 mfd.	400 V.	C9	4. mfd.	(Elect.) 150 V.
C2	.0008 mfd.	Mica	C10	.05 mfd.	200 V.
C3	.00016 mfd.	(max.) Trimmer	C11	.00025 mfd.	Mica
C4	.00024 mfd.	(max.) Trimmer	C12	.00025 mfd.	Mica
C5	.0001 mfd.	Mica	C13	.01 mfd.	400 V.
C6	.0008 mfd.	Mica	C14	.01 mfd.	400 V.
C7	.01 mfd.	400 V.	C15	.005 mfd.	600 V.
C8	.002 mfd.	600 V.	C16	.01 mfd.	400 V.

RESISTORS

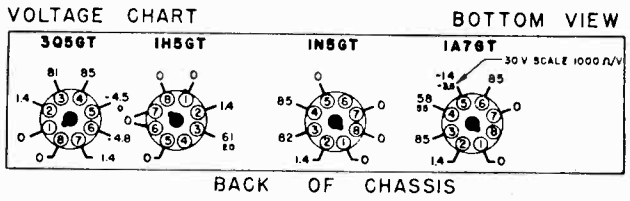
Symbol	Resistance	Type	Symbol	Resistance	Type
R1	15,000 ohms	C½W	R8	4.7 megohm	C¼W
R2	470,000 ohms	C¼W	R9	1. megohm	C¼W
R3	220,000 ohms	C½W	R10	1. megohm	C¼W
R4	33,000 ohms	C½W	R11	390 ohms	C¼W
R5	4.7 megohm	C¼W	R12	.75 ohms	W.W.½W
R6	2.2 megohm	C¼W	R13	2200 ohms	C¼W
R7	1. megohm	Vol. Con.			

COILS

Symbol	Description	Symbol	Description
L1	Antenna Coil (3 ohms)	L4	2nd I.F. Transformer
L2	Oscillator Coil (3 ohms)	L5	R.F. Choke (14.5 ohms)
L3	1st I.F. Transformer	T1	Output Transformer

VOLTAGE DATA

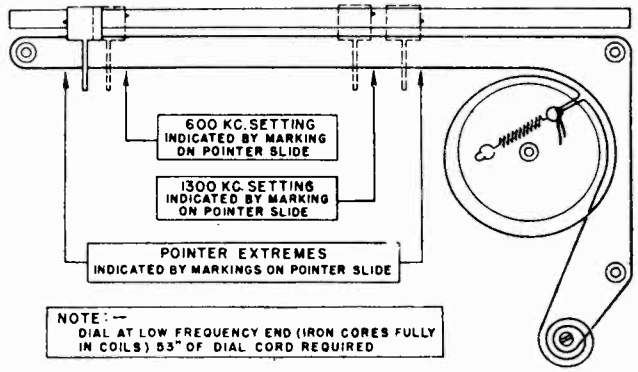
All readings made between tube socket terminals and chassis. Voltages indicated have been obtained using a Vacuum Tube Voltmeter. A second voltage reading is shown made with a 1000 ohm-per-volt meter, when use of this instrument would result in appreciably lower readings. The voltages were measured using a fresh battery, volume control full on, dial at the high frequency end, and no signal.

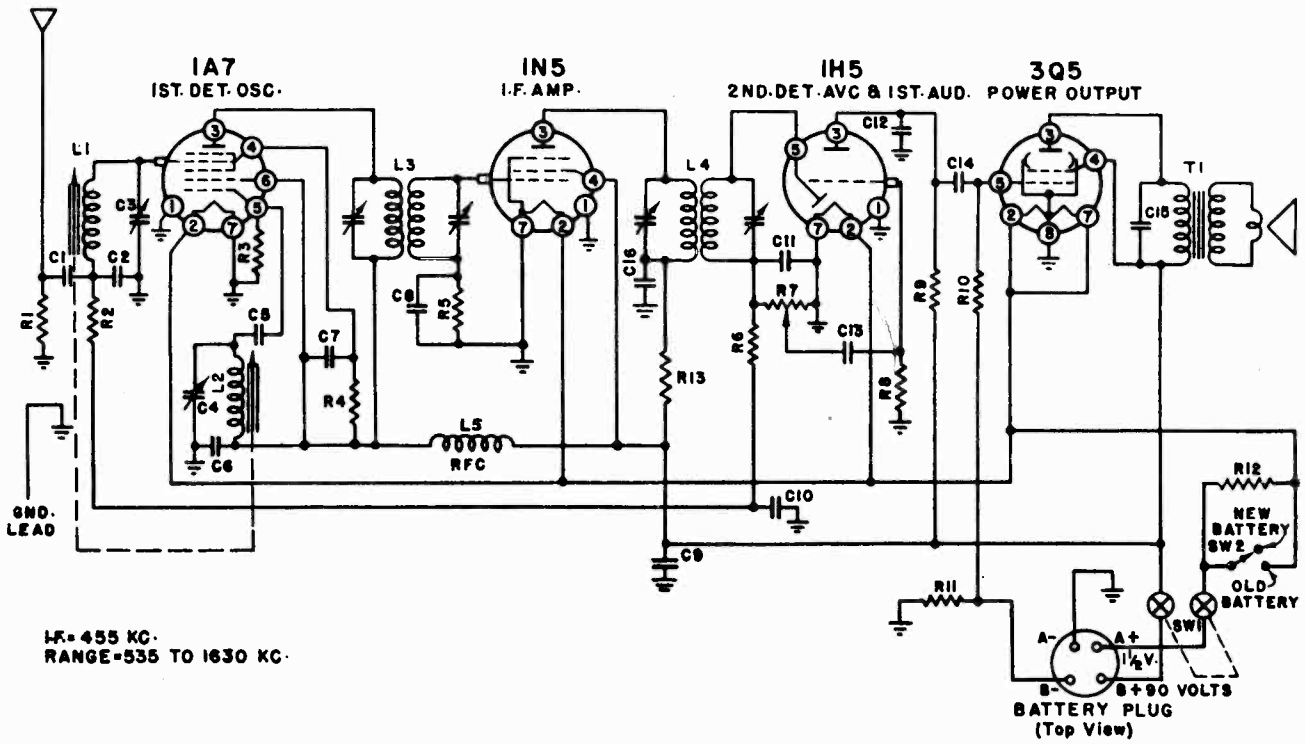


TRUETONE TUBES USED

1A7—1st Det. Osc.
1H5—2nd Det., A.V.C. and 1st Audio
1N5—I. F. Amplifier
3Q5—Power Output.

POINTER SETTINGS AND DIAL CORD STRINGING





REPLACEMENT PARTS — MODEL D-2663

PAPER CONDENSERS

Part No.	Symbol	Description
64B1-14	C8	Condenser, Tubular, .002 mfd., 600 Volt
64B1-12	C15	Condenser, Tubular, .005 mfd., 600 Volt
64B1-25	C1, C7, C13, C14, C16	Condenser, Tubular, .01 mfd., 400 Volt
64B1-32	C10	Condenser, Tubular, .05 mfd., 200 Volt

MICA CONDENSERS

65B7-17	C5	Condenser, Mica, .0001 mfd. ±20%
65B7-22	C11, C12	Condenser, Mica, .00025 mfd. ±20%
65B5-31	C2, C6	Condenser, Mica, .0008 mfd. ±10%

ELECTROLYTIC CONDENSER

67A4-2	C9	Condenser, Electrolytic, 4. mfd., 150 V.

TRIMMER CONDENSER

66A9-1	C3, C4	Condenser, Dual Trimmer

RESISTORS

61A2-1	R12	.75 ohm ±10%, ½ W. (wire)
60B2-391	R11	390. ohm ±10%, ¼ W.
60B2-222	R13	2200 ohm ±10%, ¼ W.
60B8-153	R1	15,000 ohm ±10%, ½ W.
60B8-333	R4	33,000 ohm ±10%, ½ W.
60B8-224	R3	220,000 ohm ±10%, ½ W.
60B2-474	R2	470,000 ohm ±10%, ¼ W.
60B2-105	R9, R10	1,000,000 ohm ±10%, ¼ W.
60B2-225	R6	2,200,000 ohm ±10%, ¼ W.
60B2-475	R5, R8	4,700,000 ohm ±10%, ¼ W.

VOLUME CONTROL

75B1-1	R7	1 Megohm Volume Control & Switch

TRANSFORMERS, COILS, AND CORES

AC105-1	L1	Antenna coil, specify color code
71B1-4		Iron Core, with wire (Ant.), specify color code
AB104-4	L2	Oscillator coil, specify color code
71B1-3		Iron Core, with wire (Osc.), specify color code
72B5	L3	1st I.F. Transformer
72B6	L4	2nd I.F. Transformer

TRANSFORMERS, COILS, AND CORES (Cont'd)

Part No.	Symbol	Description
AB103-1	L5	Choke coil (RF)
	T1	Output Transformer (Specify full speaker part no. including mfg. code when ordering)

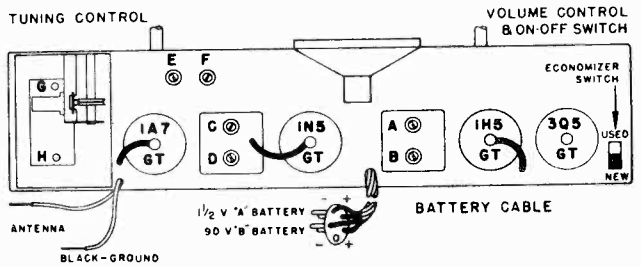
MISCELLANEOUS (Alphabetical)

Part No.	Description
35C20	Cabinet, D-2663
A1026	Cable, Battery (complete with plug)
90A1-2	Cap, Grid
50A1-1	Cord, Dial (5" on tuner and 53" on dial drive)
A1035	Drum and Hub, Tuning
23A7-1	Escutcheon
33A10-2	Knob
88A4-4	Plug, Battery, 5 Prong
25A10-1	Pointer, Dial
17A1-3	Pulley, Fibre Dial
21B14-1	Scale, Glass Dial
27A4	Screw studs (for iron cores)
28A11-1	Shaft, Tuning
A1040	Shaft and pulley (Tuner)
87A8	Shield, Tube
87A10-2	Socket, Octal Tube
78B10	Speaker and Output Transformer (Specify complete part number including mfg. code when ordering.)
19A1-5	Spring, Dial Drum Cord Tension
19A3-1	Spring, Hairpin (To hold Ant.-Osc. coils)
19A6	Spring, Tuner, back bearing takeup
19A5	Spring, Tuner, front bearing takeup
19A1-4	Spring, Tuner Slide Cord Tension
18A1	Spring, Tuner Slide Pressure
77A1-6	Switch, SPST (Economizer)
9A8-1	Terminal, Tuner Slide Cord
4A4-1	Washer, C
4A6-5-0	Washer, Spring (coils)
4A6-3-0	Washer, Spring (shaft)

Form 41A5-1

C. R. & T. C.

- IMPORTANT—Check to see that dial pointer reaches each end of dial scale when Station Selector Control is turned from one end to the other.
- Volume control—Maximum for all adjustments.
- Connect radio chassis to ground post of signal generator with a short heavy lead.
- Connect dummy antenna value in series with generator output lead, when needed (see below).
- Connect output meter across voice coil of speaker.
- Allow chassis and signal generator to "heat up" for several minutes.



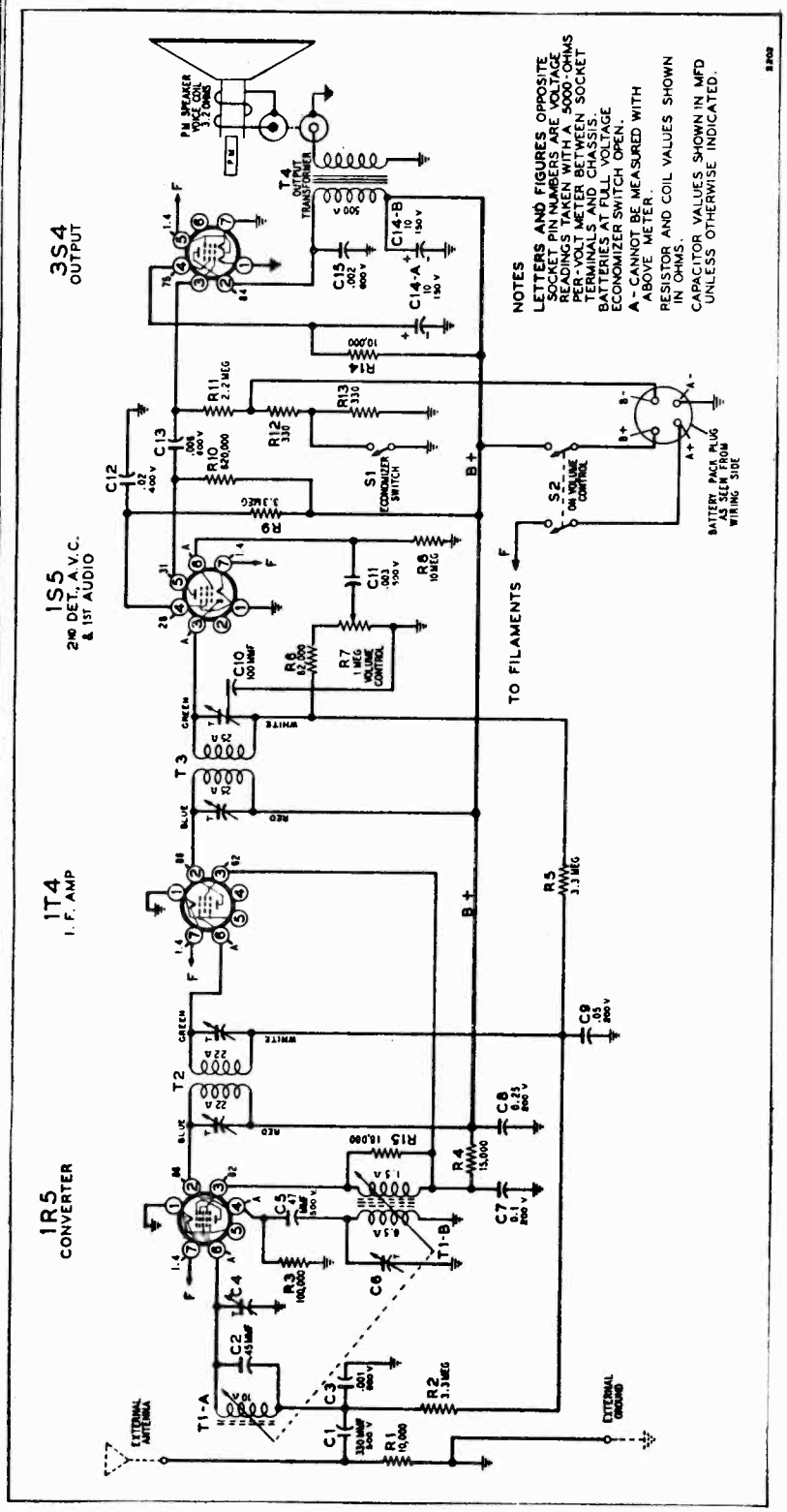
* Use lowest Output setting of Signal Generator capable of producing adequate Output Meter indication and then proceed in the following sequence.

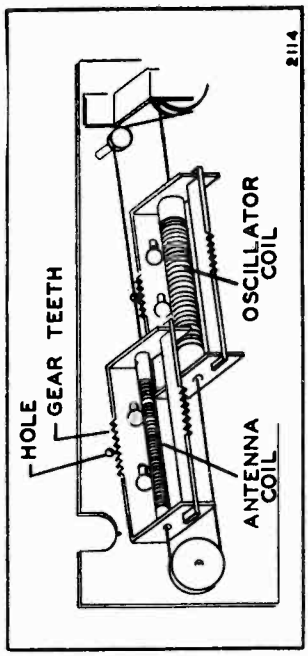
BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Receiver Dial Setting	Trimmers Adjusted (In Order Shown)	Trimmer Function	Type of Adjustment
I. F.	455 KC.	.1 MFD.	Grid of 1A7 (Cap)	High frequency end of dial	C-D—2nd I.F.	Output I.F.	Adjust to maximum output
	455 KC.	.1 MFD.	Grid of 1A7 (Cap)	High frequency end of dial	A-B—1st I.F.	Input I.F.	Adjust to maximum output
BROAD-CAST	1630 KC.	.0002 MFD.	Antenna Lead	High frequency end of dial	E—(See note below) F—(See note below)	Oscillator Antenna	Adjust to maximum output
	1300 KC.	.0002 MFD.	Antenna Lead	1300 KC.	G H	Oscillator Antenna	Adjust to maximum output

NOTE: Before adjusting trimmers "E" and "F", make sure that each iron core is 1⅜" or more outside of its coil form. If necessary, turn adjustments "G" and "H" to accomplish this.

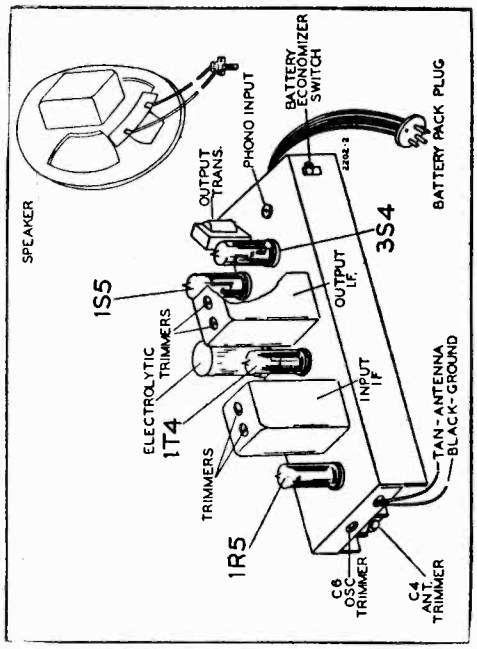
MODEL D2665

WESTERN AUTO SUPPLY CO.

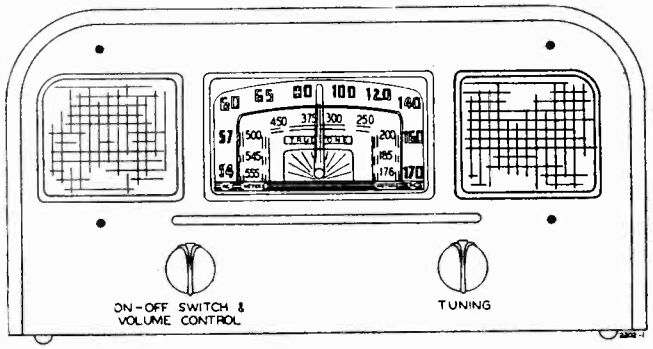




The antenna coil assembly is movable left or right. When making the adjustment as required in the alignment procedure, move the coil assembly very slowly, either by hand or by pivoting one edge of a screwdriver blade in the hole and engaging the blade in the gear teeth of the coil form.



WESTERN AUTO SUPPLY CO. MODEL D2665



If the battery pack needs replacement, use Wizard Battery Pack No. B-6411 (500 hours), No. B-6420 (750 hours), or No. B-6430 (1000 hours). Each of these packs contains a 1½-volt "A" battery and a 90-volt "B" battery.

ALIGNMENT PROCEDURE

- Output meter across 3.2-ohm output load.
- Align for maximum output. Reduce input as needed to keep output near 0.4 volts.
- Volume control at maximum for all adjustments.
- Connect ground post of signal generator to radio chassis.

SIGNAL GENERATOR			Tuner Setting	Adjust for Maximum Output (in order shown)
Frequency	Coupling Capacitor	Connection to Radio		
455 kc	.1 mf	Grid (pin 6) of 1R5	Iron cores all the way out	Trimmers on output and input I.F. cans
1700 kc	.1 mf	Grid (pin 6) of 1R5	Iron cores all the way out	Oscillator trimmer C6
1700 kc	200 mmf	Antenna lead	Iron cores all the way out	Antenna trimmer C4
1400 kc	200 mmf	Antenna lead	Turn dial to 1400 kc	Adjust position of ant. coil (see coil view)*

*This adjustment and the previous adjustment are interlocking; therefore repeat the two adjustments alternately for best results.

RECEIVER STAGE SENSITIVITIES

The table below lists the sensitivities at the input of each stage. The receiver should be tuned to 1000 KC for all readings. All measurements are based on an output of 50 milliwatts. This may be measured by disconnecting the speaker voice coil and substituting a 3.2-ohm, 5-watt resistor across the secondary winding of the output transformer. A reading of .4 volts AC across this resistor will be equivalent to a 50-milliwatt output with speaker connected.

The volume control must be set to maximum.

The signal source must be an accurately calibrated signal generator capable of supplying both 1000 kc and 455 kc signals modulated 30% with a 400-cycle audio signal.

Variations in sensitivities of plus or minus 25% are usually permissible.

SIGNAL GENERATOR				Input for 50-Milliwatt Iutput
Frequency	Coupling Capacitor	Connection to Radio	Ground Connection	
1000 kc	200 mmf	External antenna lead	Chassis	45 microvolts
1000 kc	.1 mf	Converter 1R5 (pin 6)	Chassis	129 microvolts
455 kc	.1 mf	Converter 1R5 (pin 6)	Chassis	120 microvolts
455 kc	.1 mf	IF amp. 1T4 (pin 6)	Chassis	3400 microvolts
400 cycles	.1 mf	AF amp. 1S5 (pin 6)	Chassis	.027 volts
400 cycles	.1 mf	Power amp. 3S4 (pin 3)	Chassis	2.5 volts

WESTERN AUTO SUPPLY CO.

LIST OF REPLACEMENT PARTS

When ordering parts, specify number, model number, and series

Ref. No.	Part No.	Description
		CAPACITORS
C1	C-8F3-11	330 mmf, 500 volts, 20%, mica
C2	B-8G-10426	45mmf, 10%, ceramic
C3	C-8D-10787	.001 mf, 600 volts, 20%
C4, C6	A-8H-10320	Dual trimmer, antenna and oscillator. Range of each: 84-156 mmf each
C5	C-8F3-6	47 mmf, 500 volts, 20%, mica
C7	C-8D-10771	.1 mf, 200 volts, +20%−10%
C8	C-8D-10775	.25 mf, 200 volts, +20%−10%
C9	C-8D-10770	.05 mf, 200 volts, 20%
C10		Approx. 100 mmf. Part of I.F. can
C11	C-8D-10786	.003 mf, 600 volts, 20%
C12	C-8D-10774	.02 mf, 400 volts, 20%
C13	C-8D-10785	.006 mf, 600 volts, 20%
C14-A,-B	A-8C-10258	Dual electrolytic, 10 mf x 150 volts each section
C15	C-8D-10784	.002 mf, 600 volts, 25%
		RESISTORS
R1, R14	C-9B1-74	10,000 ohms, ½ watt, 10%
R2, R5, R9	C-9B1-34	3.3 megohms, ½ watt, 20%
R3	C-9B1-86	100,000 ohms, ½ watt, 10%
R4	C-9B1-76	15,000 ohms, ½ watt, 10%
R6	C-9B1-85	82,000 ohms, ½ watt, 10%
R7, S2	A-10B-10368	Volume control (1 megohm) and on-off switch
R8	C-9B1-37	10 megohms, ½ watt, 20%
R10	C-9B1-97	820,000 ohms, ½ watt, 10%
R11	C-9B1-33	2.2 megohms, ½ watt, 20%
R12, R13	C-9B1-56	330 ohms, ½ watt, 10%
R15	C-9B1-77	18,000 ohms, ½ watt, 10%
		COILS AND TRANSFORMERS
T1-A,-B	C-211-10403	Tuner assembly complete, including antenna and oscillator coils
T2	B-13A-10333	Input I. F. transformer, complete in can. Range of trimmers: 53-97 mmf each
T3, C10	B-13B-10334	Output I. F. transformer, complete in can. Range of trimmers: 39-71 mmf each
T4	B-12C-10328	Output transformer
		MICELLANEOUS
	A-55A-7386-1	Speaker socket
	B-18A-11453	Speaker, 5-inch, P.M.
	A-15B-10326	Tube socket
S1	A-20C-10317	Economizer switch
	B-14A-10386	Battery cable assembly
	B-6D-11457	Dial scale
	B-6D-10290	Dial crystal
	B-2G-10118	Pointer
	A-53A-11340	Cord for dial pointer drive
	A-49A-10078	Spring for drive cord
	B-2M7758	Snap-in rivet for dial scale
	D-2B-11313	Cabinet
	A-5B-11456-14	Knob

ELECTRICAL SPECIFICATIONS

Power Supply.....Battery: See types above
"A"-1½-volts, 250 milliamperes
"B"-90 volts, 10.5 milliamperes

Frequency Range....540 to 1700 kc.

Intermediate Freq...455 kc.

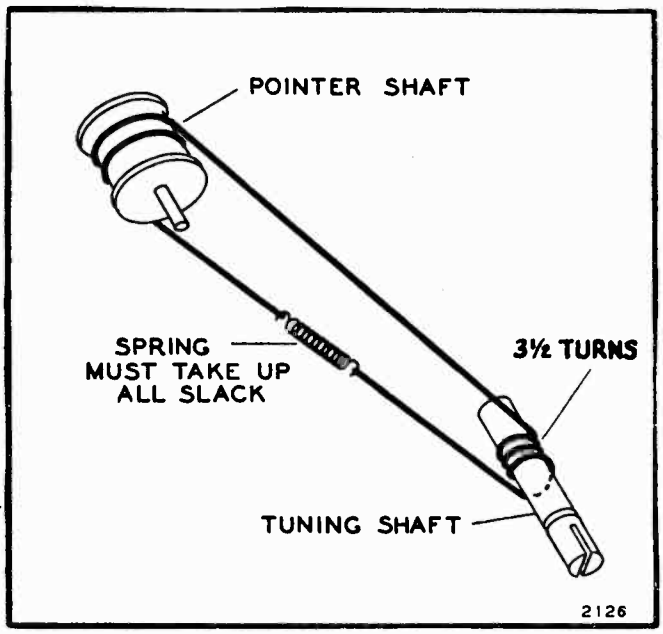
Selectivity.....At 1000 kc, 49 kc at 1000 x signal

Sensitivity.....40 microvolts average for 50-milliwatt output.

Power Output.....0.120 watt undistorted.
0.140 watt maximum.

Loud Speaker.....5-inch; P. M.; voice coil impedance 3.2 ohms.

Tube Complement....1R5, converter
1T4, I. F. amplifier
1S5, detector, AVC, audio
3S4, output amplifier



Replacement of Dial Pointer Drive Cord

WESTERN AUTO SUPPLY CO. MODEL D2693A

RADIO RECEIVER

This is a 5-tube superhetrodyne radio receiver for operation on a 105-125 volt A.C. or D.C. power supply. The tubes used are a 12SA7 as an oscillator-converter, a 12SK7 as an I.F. amplifier, a 12SQ7 as an AVC, detector and 1st audio amplifier, a 50L6GT as an output and a 35Z5GT as a power amplifier.

This receiver covers the broadcast band (from 530 to 1620 kilocycles). The dial calibrations read in kilocycles (KC) (less the final zero)

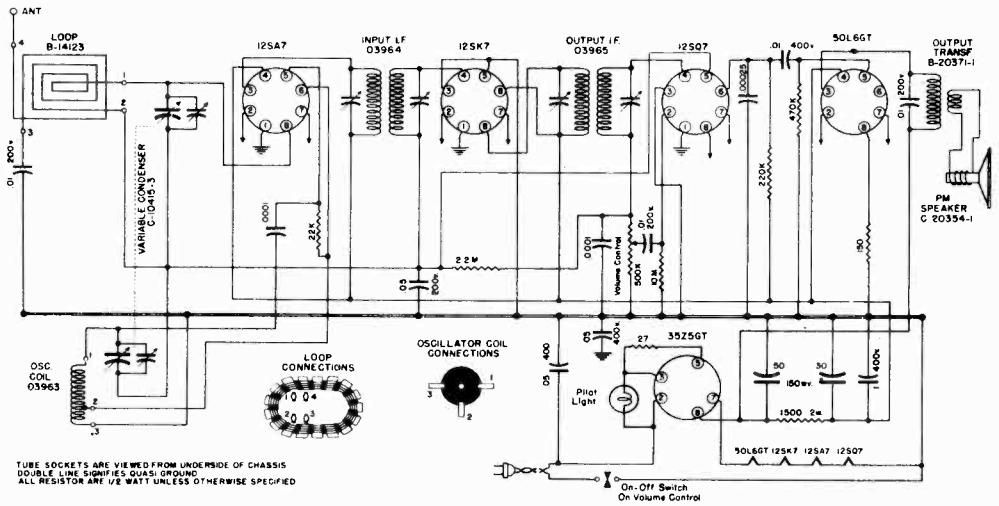
CONTROLS

VOLUME CONTROL: (Bottom knob)

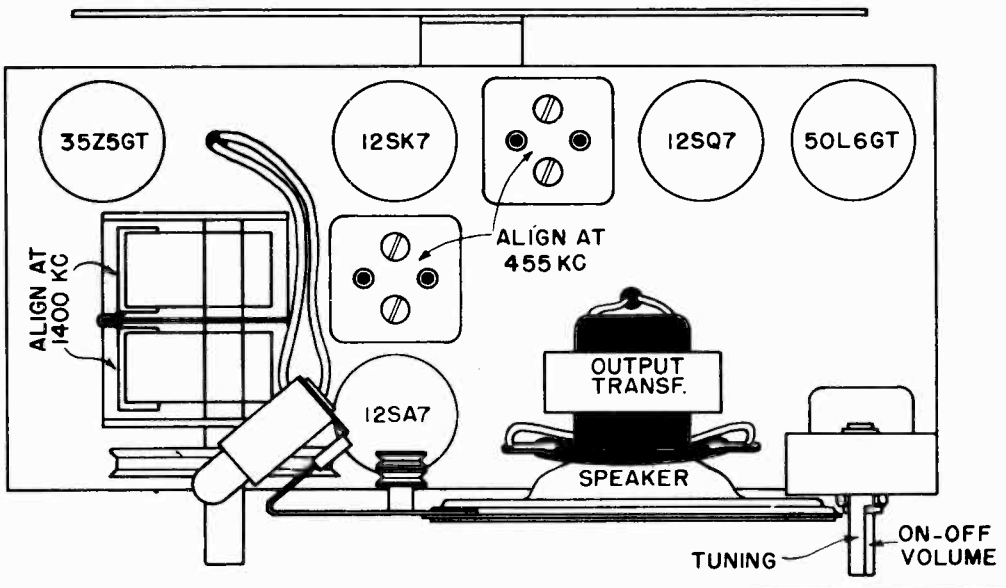
Turning knob clockwise turn the receiver on and turning further increases the volume.

TUNING CONTROL: (Top knob)

This knob is used to select stations. Tune station until it is at maximum clearness. Never attempt to reduce volume by de-tuning station -- always use the volume control.



TUBE LAYOUT

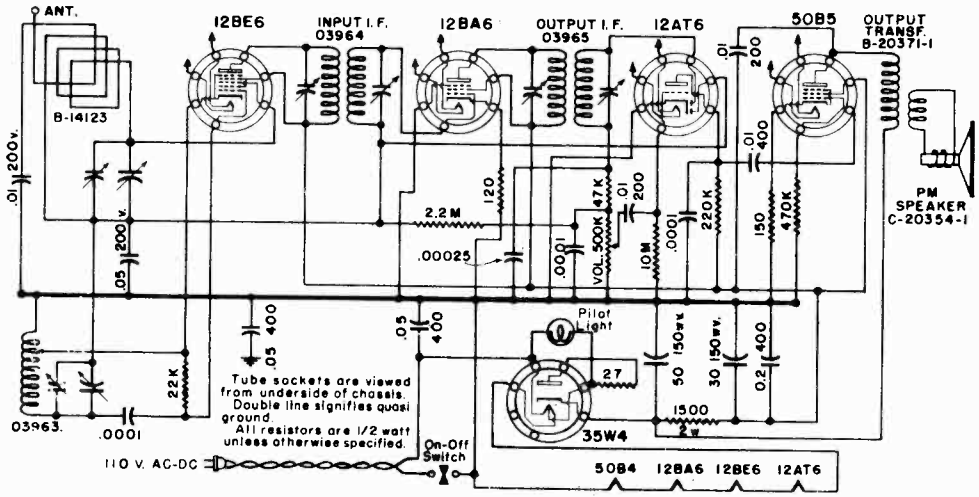


MODEL D2693B

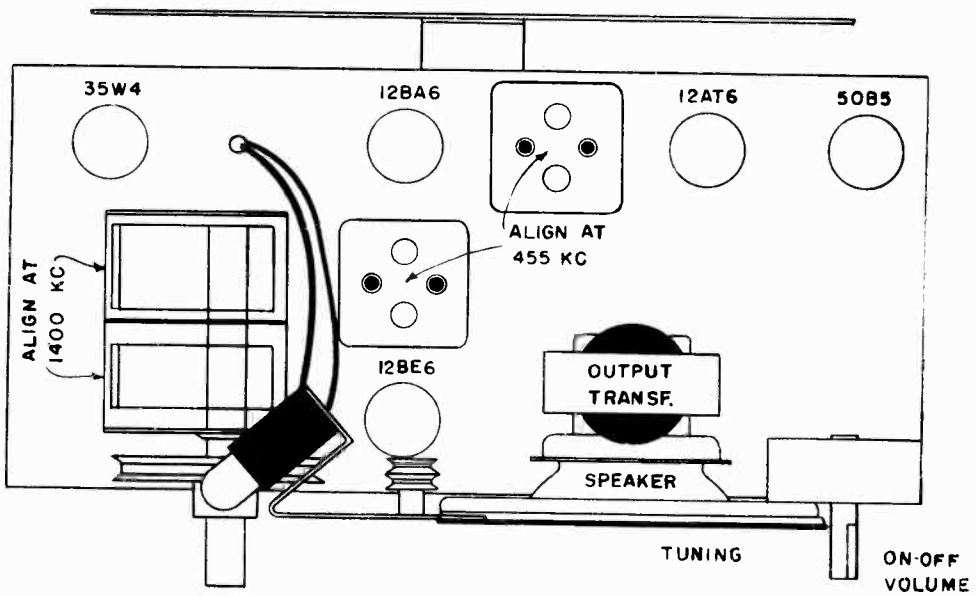
WESTERN AUTO SUPPLY CO.

This is a 5-tube superhetrodyne radio receiver for operation on a 105-125 volt A.C. or D.C. power supply. The tubes used are a 12BE6 as an oscillator converter, a 12BA6 as an I.F. amplifier, a 12AT6 as an AVC, detector and 1st audio amplifier, a 50B5 as an output and a 35B4 as a power rectifier.

This receiver covers the broadcast band (from 530 to 1620 kilocycles) The dial calibrations read in kilocycles (KC) (less the final zero)



TUBE LAYOUT



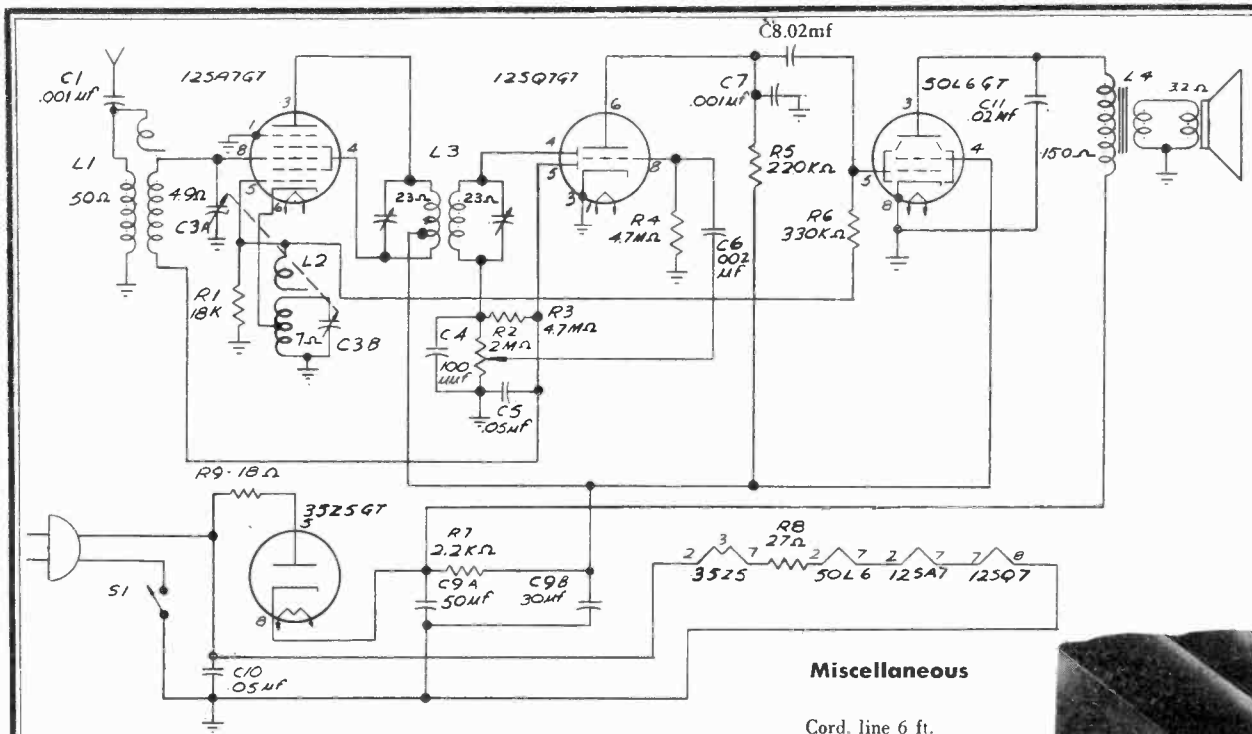
CONTROLS

VOLUME CONTROL: (Bottom knob)

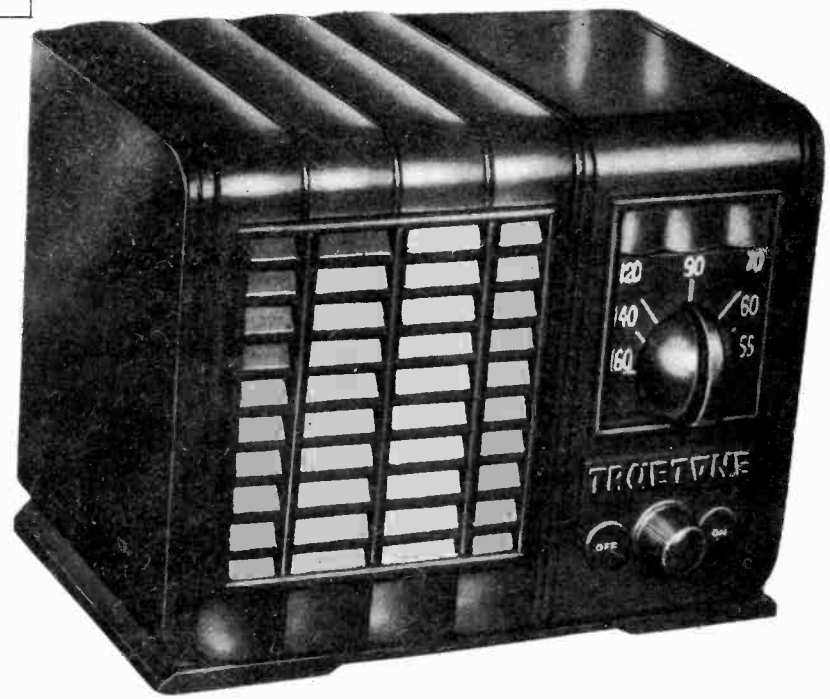
Turning knob clockwise turn the receiver on and turning further increases the volume.

TUNING CONTROL: (Top knob)

This knob is used to select stations. Tune station until it is at maximum clearness. Never attempt to reduce volume by de-tuning station -- always use the volume control.



Sensitivity (for 0.5 watt output)	600 microvolts average
Power output (in voice coil):	
Undistorted	0.8 watts
Maximum	2.5 watts
Tuning range	520 to 1590 kc
Intermediate frequency	455 kc
Power consumption	30 watts
Selectivity	1. A.C.A.—3 to 1. 2. A.C.A.—12.5 to 1



Ref. No.	*Part No.*	*Description*
		Capacitors
C1		Paper, .001 mfd 400 volts
C6		Paper, .002 mfd 400 volts
C8-C11		Paper, .02 mfd 400 volts
C5		Paper, .05 mfd 200 volts
C7		Paper, .001 mfd 500 volts
C4		Ceramic 100 mmfd 500 volts
C2	1675	Variable Air—2 gang
C9	2073	Electrolytic, 50-30 mfd 150 volts
C10		Paper, .05 mfd 400 volts
		Coils and Transformers
L2	28184	Oscillator coil
L3	3376	I.F. transformer
L4	1300	Output transformer
L1	28185	Antenna coil

		Miscellaneous
		Cord, line 6 ft.
39160		Knob, tuning
39161		Knob, volume
5877		Speaker
54314		Tuning knob washer
18110		Sockets, wafer octal
62194		Back cover

		Resistors
R2	2480	Control, volume with switch, 2 meg-ohms
R1		18000 ohms, ¼ watt
R3, R4		4.7 meg ohms, ¼ watt
R5		220,000 ohms, ¼ watt
R6		330,000 ohms, ¼ watt
R7		2200 ohms, 2 watts
R8		27 ohms, ½ watt
R9		18 ohms, ½ watt

MODEL D2709 WESTERN AUTO SUPPLY CO.

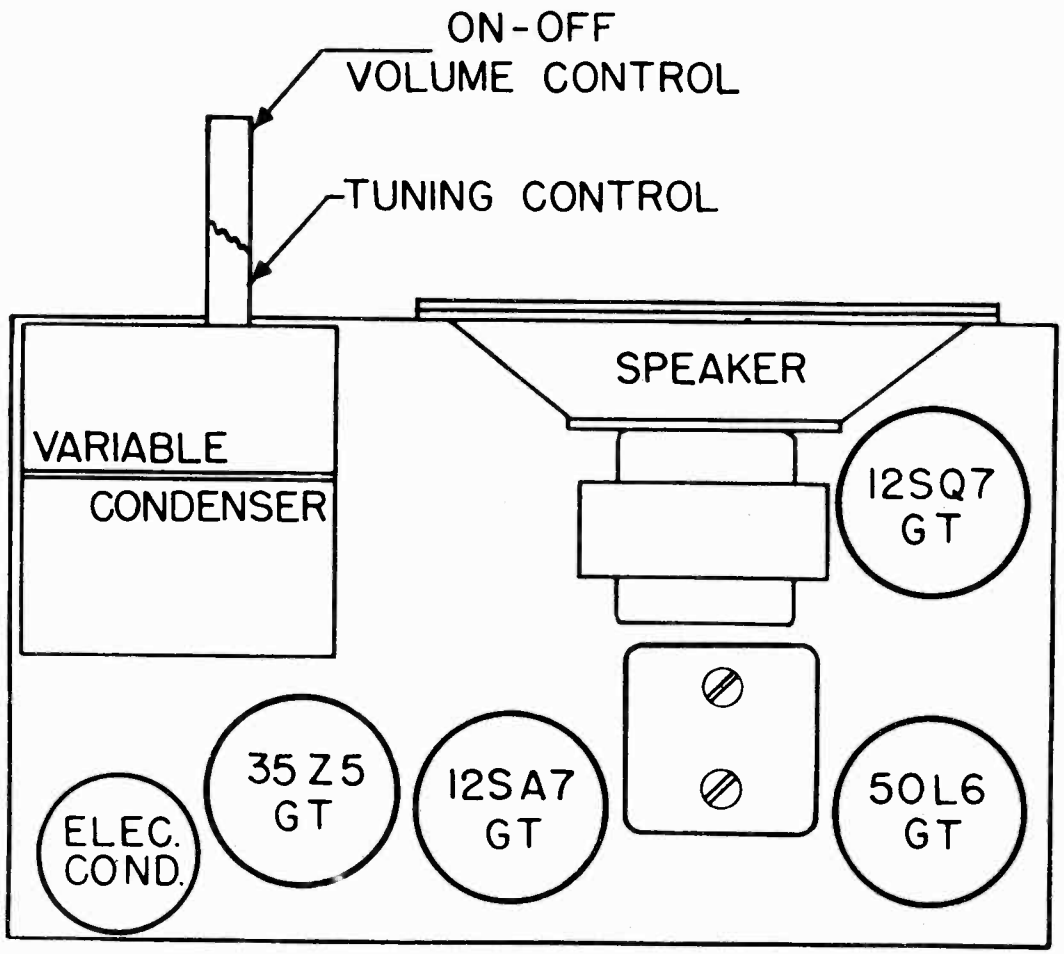
ALIGNMENT PROCEDURE

(Refer to Chassis View)

- Output meter across 3.2-ohm output load.
- Volume control at maximum.
- Align for maximum output. Reduce input as needed to keep output near 0.4 volts.
- Connect ground post of signal generator to chassis.

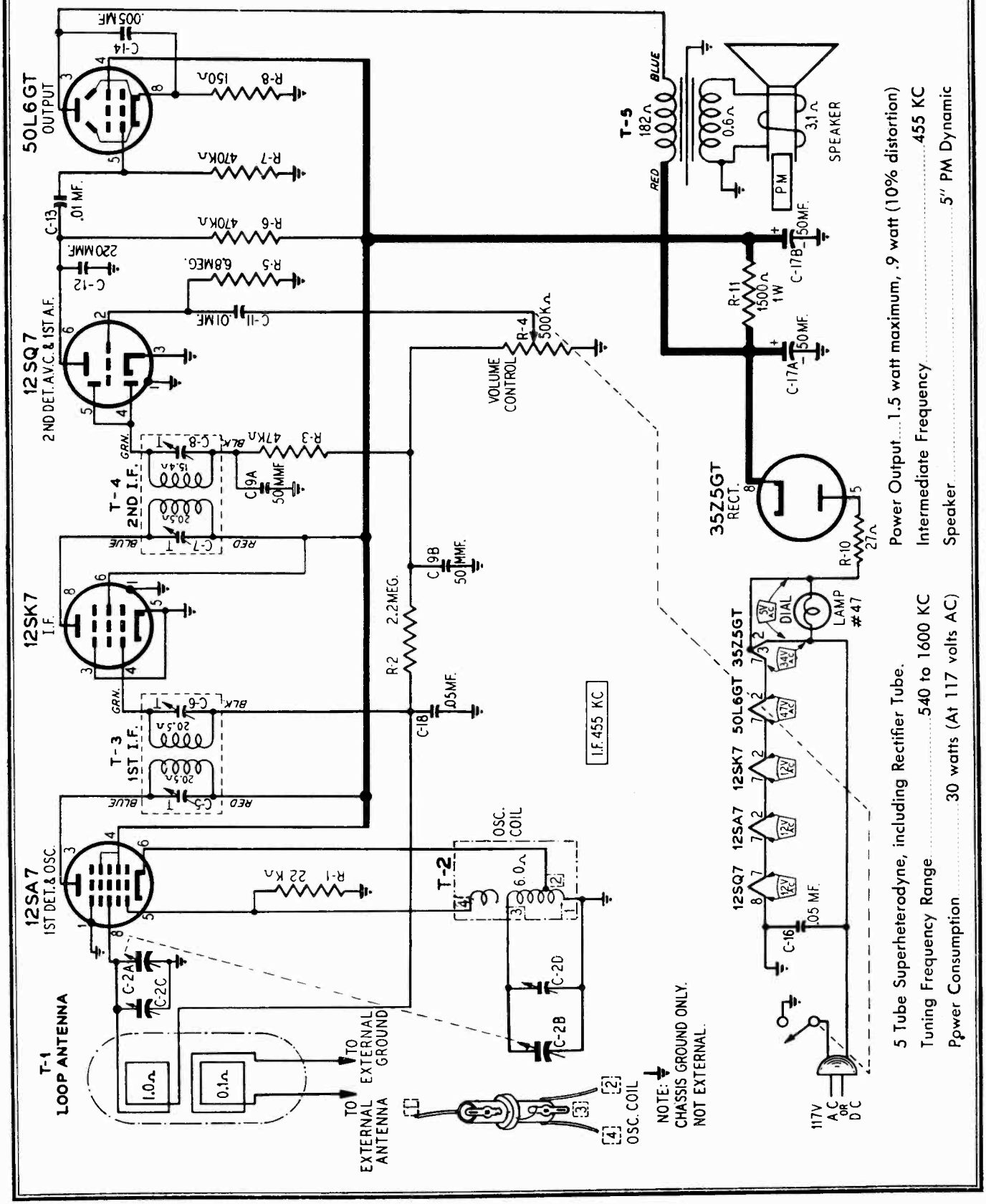
SIGNAL GENERATOR			*TUNER SETTING*	*ADJUST FOR MAXIMUM OUTPUT (in order shown)*
Frequency	*Dummy Antenna*	*Connection to Radio*		
455 kc	0.1 mf	Stator of antenna section of gang	Any	Trimmers on I.F. can
1590 kc	50 mmfd	Primary of antenna coil	Rotor full open (plates out of mesh)	Oscillator trimmer
1590 kc	50 mmfd	Primary of antenna coil	Rotor full open (plates out of mesh)	Antenna trimmer

TUBE LOCATION



WESTERN AUTO SUPPLY CO.

MODEL D2710



5 Tube Superheterodyne, including Rectifier Tube.

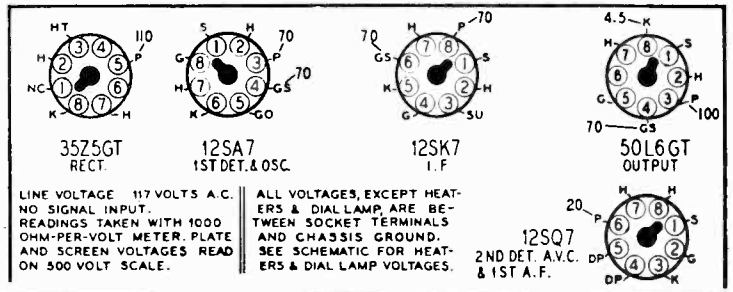
Power Output....1.5 watt maximum, .9 watt (10% distortion)

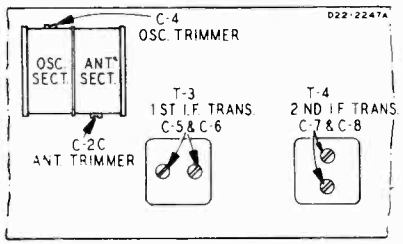
Tuning Frequency Range.....540 to 1600 KC

Intermediate Frequency.....455 KC

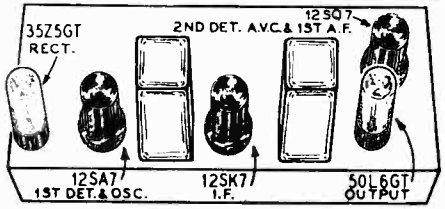
Power Consumption.....30 watts (At 117 volts AC)

Speaker.....5" PM Dynamic



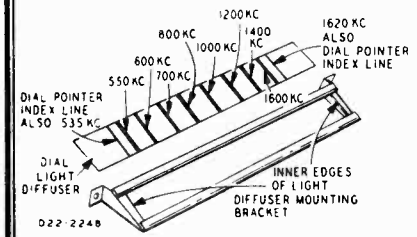


Note A—Use 1400 KC Index line on dial light diffuser. See DIAL CALIBRATION paragraph.



NOTICE: There is a model number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

DIAL CALIBRATION



MISCELLANEOUS

12A473	5" P.M. Speaker Cone and Voice Coil Assembly (Specify Part Number and Letters Stamped on Speaker)	
3A303	Tube Socket (8 Prong) Molded	
55X262	Cabinet, Plastic	
14X411	Grille Cloth	
10A297	Knob	
2X289	Felt Washer	
13X328	Line Cord and Plug Assembly	

TRANSFORMERS AND COILS

9A1912	T-1	"B" Rnge Loop Antenna Assembly
9A1914	T-2	Oscillator Coil Assembly
9A1808	T-3	1st I-F Coil Assembly
9A1809	T-4	2nd I-F Coil Assembly
51X132	T-5	Output Transformer

CAPACITORS

14A194	C-2A, C-2B, C-2C, C-2D	Gang Condenser Assembly		
	C-5, C-6	Part of T-3 (1st I-F Coil Assembly		
	C-7, C-8	Part of T-4 (2nd I-F Coil Assembly)		
47X112	C-9A, C-9B	50-50 mmf		Dual Mica
B66103	C-11, C-13	.01 mf	200 V	Tubular
47X468	C-12	220 mmf		Molded
D66502	C-14	.005 mf	400 V	Tubular
D66503	C-16	.05 mf	400 V	Tubular
45X341	C-17A	50 mf	150 V	Dry Electrolytic
	C-17B	50 mf	150 V	
B66503	C-18	.05 mf	200 V	Tubular

RESISTORS

B84223	R-1	22,000 ohms	0.5 watt	Carbon
B85225	R-2	2.2 meg.	0.5 watt	Carbon
B85473	R-3	47,000 ohms	0.5 watt	Carbon
36X352	R-4	500,000 ohms	Volume control and switch	
B85685	R-5	6.8 meg.	0.5 watt	Carbon
B84474	R-6	470,000 ohms	0.5 watt	Carbon
B85474	R-7	470,000 ohms	0.5 watt	Carbon
B84151	R-8	150 ohms	0.5 watt	Carbon
B84270	R-10	27 ohms	0.5 watt	Carbon
C85152	R-11	1500 ohms	1.0 watt	Carbon

DIAL AND DRIVE ASSEMBLY

26A464	Pointer Bracket Assembly complete with light diffuser holder, string guide, idler pulleys, etc.	
15X223	Pointer	
6X21	Rubber Grommet (Mtg. gang	
20X329	Cond. Cushion Stud) condenser	
26X482	Drive shaft	
19X192	"C" Washer	
10X36	Drive cord assembly	
28X95	Drive cord tension spring	
7A213	Pilot light socket assembly No. 47 Pilot light	
58X683	Dial	
30X539	Dial clamp (upper)	
30X540	Dial clamp (lower)	

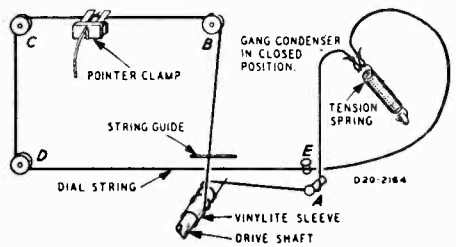
ALIGNMENT PROCEDURE

Check dial pointer position, see DIAL CALIBRATION paragraph.
Volume Control—Maximum All Adjustments.
Allow Chassis and Signal Generator to "Heat Up" for several Minutes.
The equipment in column at right is required for aligning:
Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.
Output Indicating Meter: Non-Metallic Screwdriver.
Dummy Antennas—.1 mf., 50 mmf.
Blocking Condenser—.1 mf.

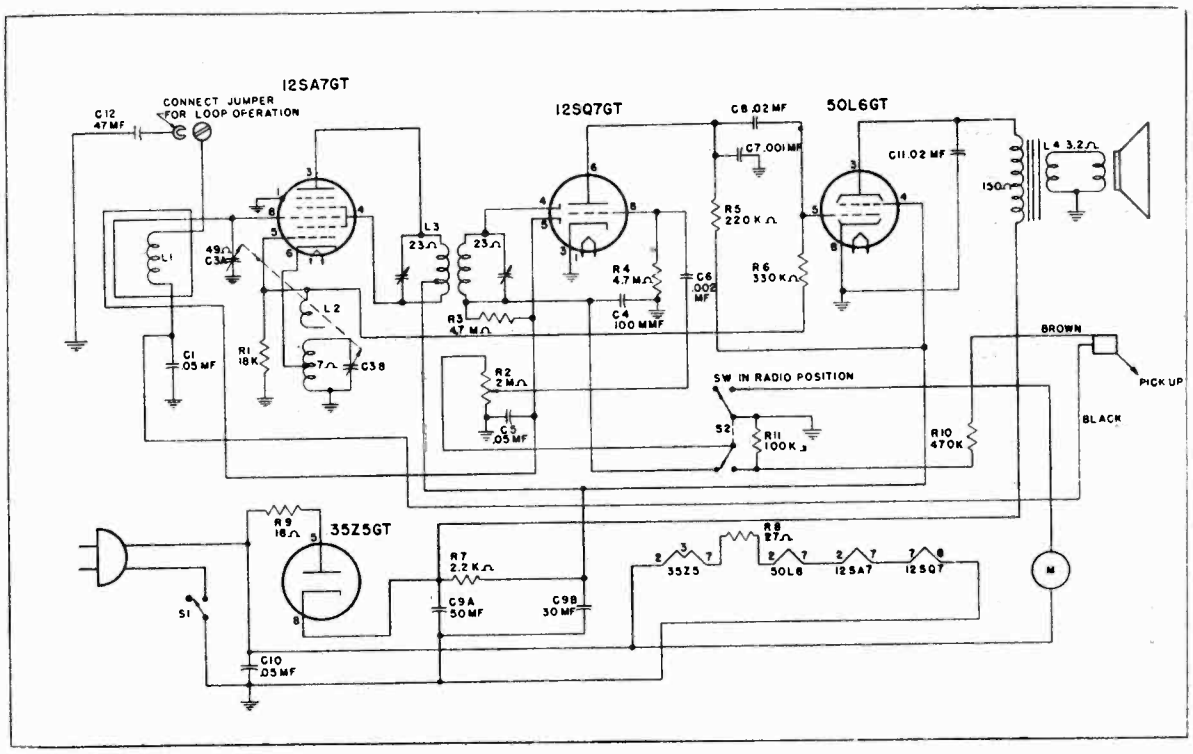
SIGNAL GENERATOR					
FREQUENCY SETTING	ANTENNA CONNECTION	GROUND CONNECTION	DUMMY ANTENNA	GANG CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM (See Trimmer Illustration)
455 KC	Control Grid 12SK7—I.F. Prong No. 4	Chassis Base Through .1 mf. Condenser	.1 mf.	Turn Rotor to full open	2nd I.F. (C7) & (C8)
455 KC	Control Grid 12SA7—1st Det. Prong No. 8	Same As Above	.1 mf.	Turn Rotor to full open	1st I.F. (C5) & (C6)
1620 KC	Control Grid 12SA7—1st Det. Prong No. 8	External Ground Clip On Loop	.1 mf.	Turn Rotor to full open	Oscillator (C-4)
1400 KC	External Antenna Clip On Loop	Same As Above	50 mmf.	Turn dial to 1400 KC. See Note A	Antenna (C-2C)

DRIVE CORD REPLACEMENT

Turn the large drive pulley to the maximum counterclockwise position. Use a new 10x36 drive cord assembly or a piece of cord 53 inches long and tie one end to the tension spring and fasten the other end of the spring to the drive pulley. Install the cord as shown in the illustration. Wind 2¾ turns counterclockwise around the tuning shaft with the turns progres-



WESTERN AUTO SUPPLY CO. MODEL D2743



REPLACEMENT PARTS LIST

When ordering, specify part number, model number, and manual issue

Ref. No.	*Part No.*	*Description*
		Capacitors
C1-C10		Paper, .05 mfd 400 volts
C6		Paper, .002 mfd 400 volts
C8-C11		Paper, .02 mfd 400 volts
C5		Paper, .05 mfd 200 volts
C7		Paper, .001 mfd 500 volts
C4		Ceramic 100 mmfd 500 volts
C12		Ceramic 47 mmfd 500 volts
C3	1675	Variable Air—2 gang
C9	2073	Electrolytic, 50-30 mfd 150 volts
		Resistors
R2	2480	Control, volume with switch, 2 meg-ohms
R1		18,000 ohms, ¼ watt
R3, R4		4.7 meg ohms, ¼ watt
R5, R10		220,000 ohms, ¼ watt
R6		330,000 ohms, ¼ watt
R7		2200 ohms, 2 watts
R8		27 ohms, ½ watt
R9		18 ohms, ½-watt
R11		100,000 ohms, ¼ watt

Ref. No.	*Part No.*	*Description*
		Coils and Transformers
L1	28186	Back cover with loop
L2	28184	Oscillator coil
L3	3376	I.F. transformer
L4	1300	Output transformer
		Miscellaneous
		Cord, line 6 ft.
	39160	Knob, tuning
	39161	Knob, volume or phono radio
	5877	Speaker
	T470	Cabinet, wood
	54314	Tuning knob washer
		Phono-needle
	346-5	Walsco back clips
	18110	Sockets, wafer octal
	3828	Switch, phono-radio
		Phono motor and 8-inch turntable
		Phono crystal, L-26

ALIGNMENT PROCEDURE

(Refer to Chassis View)

- Output meter across 3.2-ohm output load.
- Volume control at maximum.
- Align for maximum output. Reduce input as needed to keep output near 0.4 volts.
- Connect ground post of signal generator to chassis.

SIGNAL GENERATOR			TUNER SETTING	ADJUST FOR MAXIMUM OUTPUT (in order shown)
Frequency	*Dummy Antenna*	*Connection to Radio*		
455 kc	0.1 mf	Stator of antenna section of gang	Any	Trimmers on I.F. can
1590 kc	* *	* *	Rotor full open (plates out of mesh)	Oscillator trimmer
1590 kc	* *	* *	Rotor full open (plates out of mesh)	Antenna trimmer

* Run a wire from output terminal of the generator near the receiver. However, no connection is made between the signal generator and the receiver.

TECHNICAL DATA

Tuning range ..... 530 to 1600 kc

Intermediate frequency ..... 455 kc

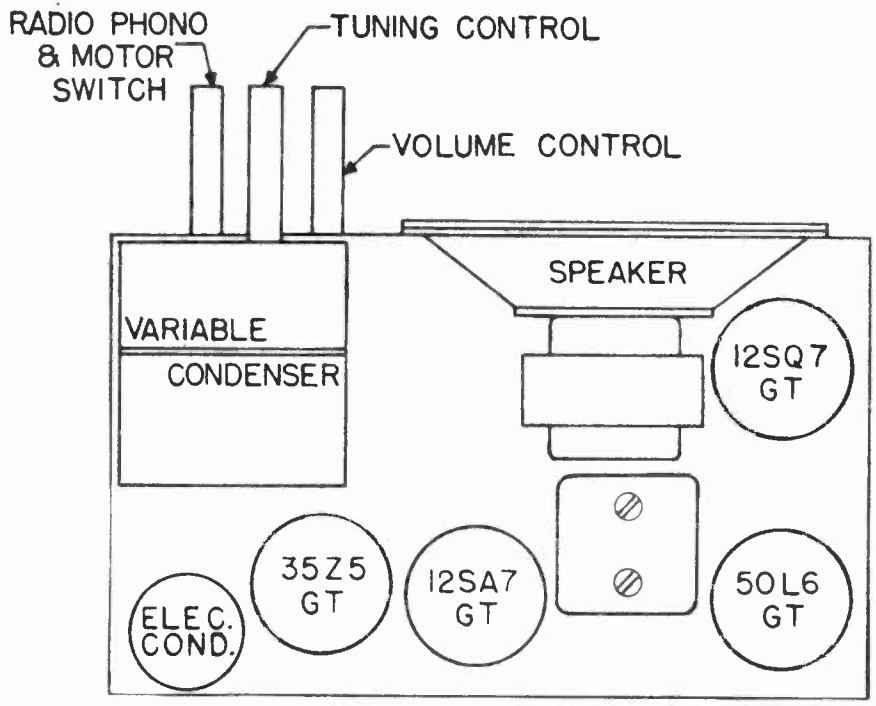
Power consumption ..... 30 watts

Selectivity ..... 1. A.C.A.—3 to 1. 2. A.C.A.—12.5 to 1

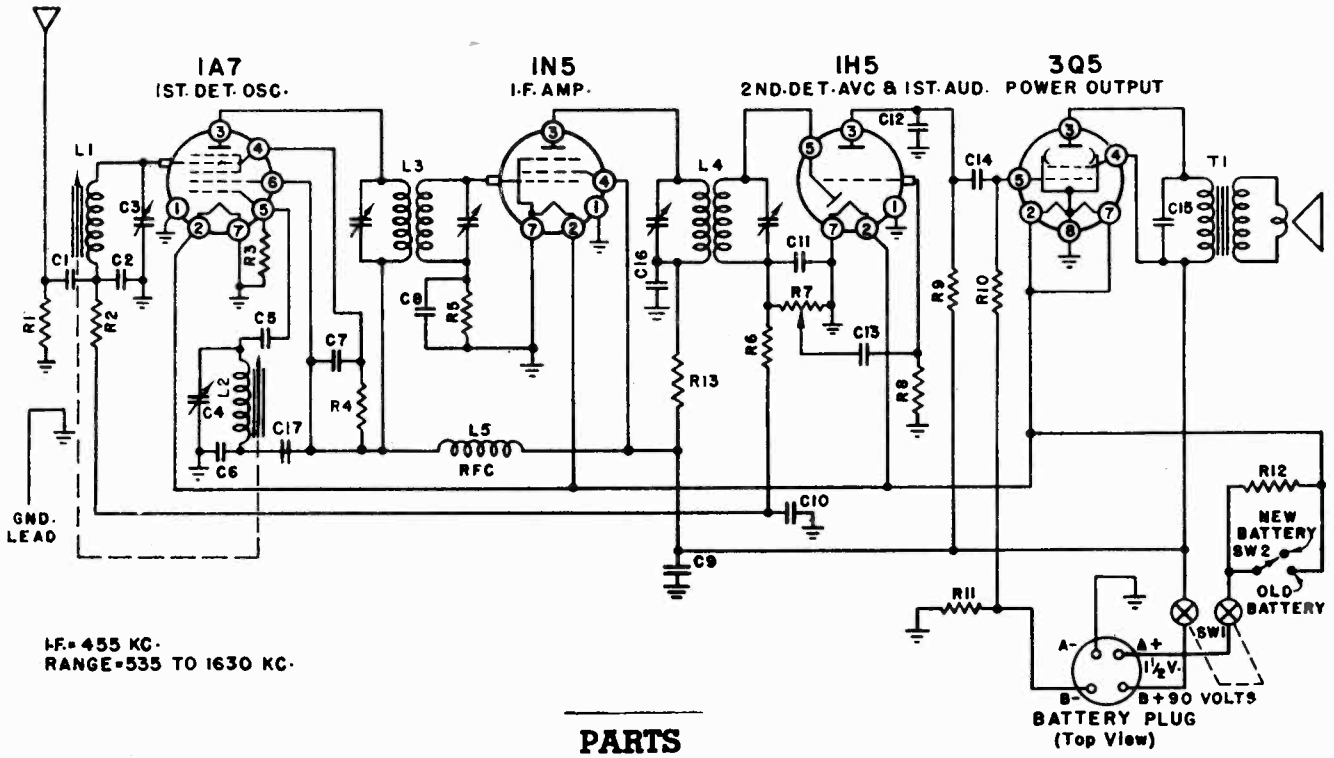
Sensitivity (for 0.5 watt output) :
- Loop ..... 8000 microvolts per meter average
- Antenna ..... 800 microvolts average

Power output (in voice coil) :
- Undistorted ..... 0.8 watts
- Maximum ..... 2.5 watts

TUBE LOCATION



WESTERN AUTO SUPPLY CO. MODEL D2762



PARTS

CONDENSERS

Symbol	Description	Part No.
C1	Paper, .01 mfd. 400 Volts	64B1-25
C2	Mica, .0008 mfd. ±10%	65B5-31
C3	Trimmer, Antenna	66A23-1
C4	Trimmer, Oscillator	
C5	Mica, .0001 mfd. ±20%	65B7-17
C6	Mica, .0008 mfd. ±10%	65B5-31
C7	Paper, .01 mfd., 400 Volts	64B1-25
C8	Paper, .002 mfd., 600 Volts	64B1-14
C9	Elect., 4. mfd., 150 Volts	67A4-2
C10	Paper, .05 mfd., 200 Volts	64B1-32
C11	Mica, .00025 mfd. ±20%	65B7-22
C12	Mica, .00025 mfd. ±20%	65B7-22
C13	Paper, .01 mfd. 400 Volts	64B1-25
C14	Paper, .01 mfd. 400 Volts	64B1-25
C15	Paper, .005 mfd., 600 Volts	64B1-12
C16	Paper, .01 mfd., 400 Volts	64B1-25
C17	Paper, .01 mfd., 400 Volts	64B1-25

RESISTORS

R1	15,000 ohm ±10%, ½w	60B8-153
R2	470,000 ohm ±10%, ¼w	60B2-474
R3	220,000 ohm ±10%, ½w	60B8-224
R4	33,000 ohm ±10%, ½w	60B8-333
R5	4,700,000 ohm ±10%, ¼w	60B2-475
R6	2,200,000 ohm ±10%, ¼w	60B2-225
R7	1 Megohm Volume Control and Switch	75B1-1
R8	4,700,000 ohm ±10%, ¼w	60B2-475
R9	1,000,000 ohm ±10%, ¼w	60B2-105
R10	1,000,000 ohm ±10%, ¼w	60B2-105
R11	390 ohm ±10%, ¼w	60B2-391
R12	0.75 ohm ±10%, ½w (wire)	61A2-1
R13	2200 ohm ±10%, ¼w	60B2-222

TRANSFORMERS and COILS

L1	Antenna Coil	AC105-1
L2	Oscillator Coil	A1020
L3	1st I.F. Transformer	72B5
L4	2nd I.F. Transformer	72B6
L5	Choke Coil (RF)	AB103-1
T1	Output Transformer	98A5

MISCELLANEOUS

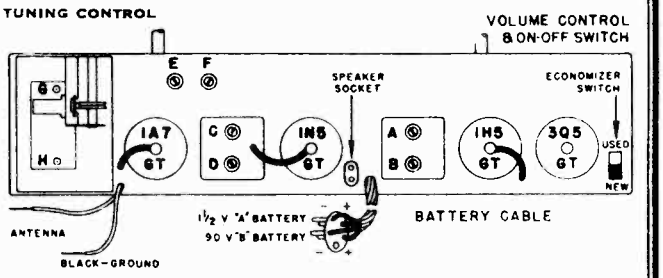
Description	Part No.
Background, Dial	X22C5-1
Cabinet, D2762 (Plastic)	34D9
Cable, Battery (complete with plug)	A1026
Cap, Grid	90A1-2
Clip, Dial Glass	18A2
Cord, Dial (5" on tuner and 63" on dial drive)	50A1-3
Dial Scale, Glass	21B24
Drum and Hub, Tuning	A1035
Grille Cloth	36B3-1
Iron Slug, with wire (Oscillator)	71B1-3
Iron Slug, with wire (Antenna)	71B1-4
Knob	33A10-2
Plug, Battery, 5 Prong	88A4-4
Pointer, Dial	25A9-1
Pulley, Fibre Dial	17A1-3
Screw Studs (for iron cores)	27A4
Shaft, Tuning	28A1-1
Shaft and Pulley (Tuner)	A1040
Shield, Tube	87A8
Socket, Octal Tube	87A5-1
Socket, Speaker	87A4-3
Speaker and Output Transformer	78B15-2
Speaker Guard	36A5-2
Spring, Dial Drum Cord Tension	19B1-7
Spring, Hairpin (To hold Ant. or Osc. Coils)	19A3-1
Spring, Tuner Slide Cord Tension	19A1-4
Spring, Tuner, back bearing takeup	19A6
Spring, Tuner, front bearing takeup	19A5
Spring, Tuner Slide Pressure	18A9
Switch, SPST (Economizer) SW2	77B1-6 or 77B1-15
Washer, C	4A4-1
Washer, spring (coils)	4A6-12-0
Washer, spring (shaft)	4A6-3-0

MODEL D2762

WESTERN AUTO SUPPLY CO.

ALIGNMENT PROCEDURE

- **IMPORTANT—Check to see that dial pointer reaches each end of dial scale when Station Selector Control is turned from one end to the other.**
- **Volume control—Maximum for all adjustments.**
- **Connect dummy antenna valve in series with generator with a short heavy lead.**
- **Connect dummy antenna valve in series with generator output lead, when needed (see below).**
- **Connect output meter across voice coil of speaker.**
- **Allow chassis and signal generator to warm up for several minutes.**



- **Use lowest Output setting of Signal Generator capable of producing adequate Output Meter indication and then proceed as indicated in the chart below.**

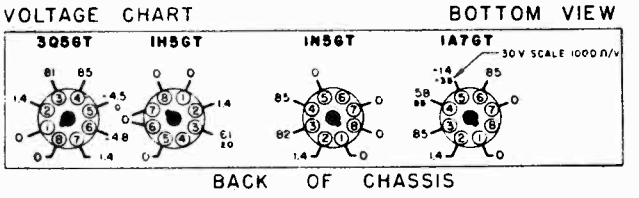
Band	Signal Generator Frequency	Dummy Antenna	Connection to Radio	Receiver Dial Setting	Trimmers Adjusted (In Order Shown)	Trimmer Function	Type of Adjustment
I. F.	455 KC.	.1 MFD.	Grid of 1A7 (Cap)	High frequency end of dial	C-D—2nd I.F.	Output I.F.	Adjust to maximum output
	455 KC.	.1 MFD.	Grid of 1A7 (Cap)	High frequency end of dial	A-B—1st I.F.	Input I.F.	Adjust to maximum output
BROAD-CAST	1630 KC.	.0002 MFD.	Antenna Lead	High frequency end of dial	E—(See note below) F—(See note below)	Oscillator Antenna	Adjust to maximum output
	1300 KC.	.0002 MFD.	Antenna Lead	1300 KC.	G H	Oscillator Antenna	Adjust to maximum output

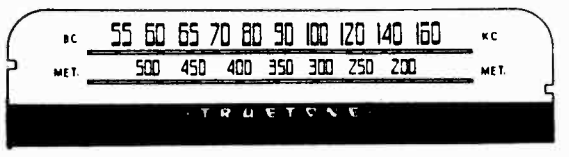
NOTE: Before adjusting trimmers "E" and "F", make sure that each iron core is 1⅜" or more outside of its coil form. If necessary, turn adjustments "G" and "H" to accomplish this.

VOLTAGE DATA

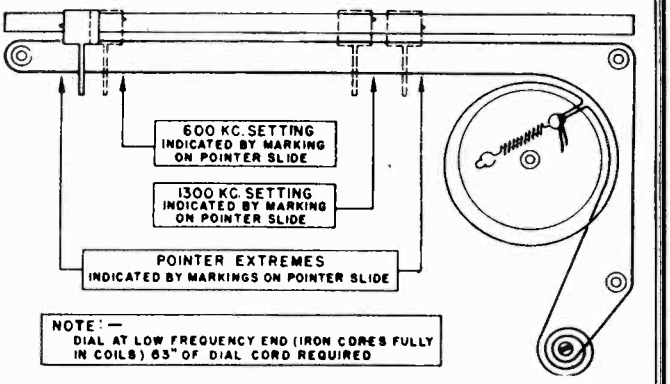
All readings made between tube socket terminals and chassis. Voltages indicated have been obtained using a Vacuum Tube Voltmeter. A second voltage reading is shown made with a 1000 ohm-per-volt meter, when use of this instrument would result in appreciably lower readings. The voltages were measured using a fresh battery, volume control full on, dial at the high frequency end, and no signal.

1A7—1st Det. Osc. 1H5—2nd Det., A.V.C. and 1st Audio.
1N5—I. F. Amplifier 3Q5—Power Output.





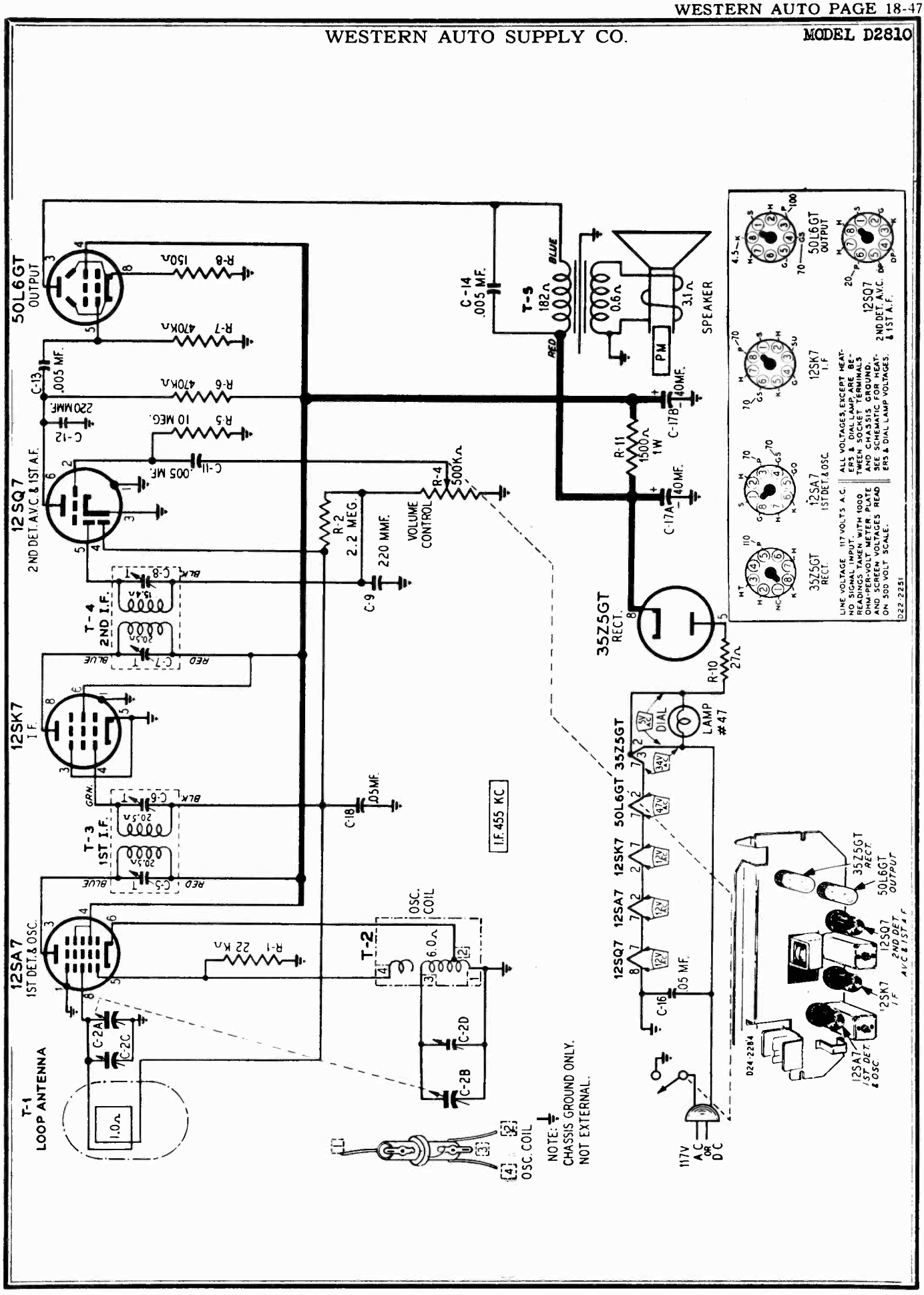
POINTER SETTINGS AND DIAL CORD STRINGING



POWER SUPPLY

This receiver is designed to operate on a single unit Ensign AB48, Ray-O-Vac No. AB-82, Burgess 17G-D60, Eveready 748, Bond 0528 or General 60DL-11L Battery. No other batteries are required as this battery is a combination 90 volt "B" battery and a 1½ volt "A" battery. The life of this battery is approximately 750 hours. The "A" and "B" sections are so proportioned that equal life may be expected from both. The "A" section will give satisfactory performance as low as 1.2 volts and the "B" section as low as 68 volts. This battery life may be expected with an average usage of several hours daily. If the reception becomes weak when the Economizer Switch is in the "USED" position, a new battery should be installed. A battery compartment is provided in the rear of the cabinet, and the battery cable simply plugs into the battery.

WESTERN AUTO SUPPLY CO. MODEL D2810



MODEL D2810 WESTERN AUTO SUPPLY CO.

SPECIFICATIONS

Power Output....1.5 watt maximum, .9 watt (10% distortion)
Intermediate Frequency.....455 KC
Speaker.....5" PM Dynamic

5 Tube Superheterodyne, including Rectifier Tube.
Tuning Frequency Range.....540 to 1600 KC
Power Consumption.....30 watts (At 117 volts AC)

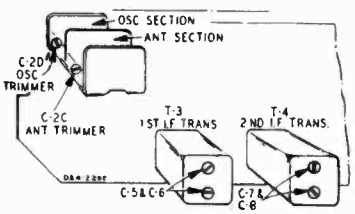
ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.
Allaw Chassis and Signal Generator to "Heat Up" for several Minutes.

The equipment in column at right is required for aligning:

Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.
Output Indicating Meter: Non-Metallic Screwdriver.
Dummy Antennas—.1 mf., 50 mmf.
Blocking Condenser—.1 mf.

SIGNAL GENERATOR					
FREQUENCY SETTING	ANTENNA CONNECTION	GROUND CONNECTION	DUMMY ANTENNA	GANG CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM (See Trimmer Illustration)
455 KC	Control Grid 12SK7—I.F. Prong No. 4	Chassis Bose Through .1 mf. Condenser	.1 mf.	Turn Rotor to full open	2nd I.F. (C7) & (C8)
455 KC	Control Grid 12SA7—1st Det. Prong No. 8	Same As Above	.1 mf.	Turn Rotor to full open	1st I.F. (C5) & (C6)
1620 KC	Control Grid 12SA7—1st Det. Prong No. 8	Same as Above	.1 mf.	Turn Rotor to full open	Oscillator (C-2D)
1400 KC	Reassemble chassis in cabinet See Note B	Same As Above	50 mmf.	Set pointer to 1400 KC. See Note A	Antenna (C-2C)

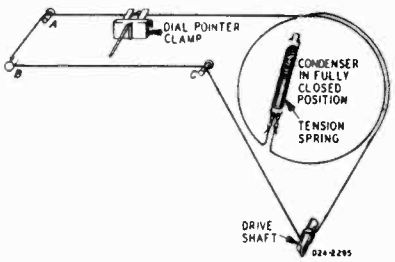


Note A—Attach pointer to drive cord and position at 1400 KC mark on dial scale.

Note B—Wind 2 turn loop of heavy enameled wire 6" diameter. Connect to signal generator. Place loop of wire 6" from loop on set and in the same plane.

DRIVE CORD REPLACEMENT

Turn the large drive pulley to the fully closed position. Use a new 10X66 drive cord assembly or a piece of cord 45 inches long and fasten one end to the tension spring and fasten the other end of the spring to the drive pulley. Install the cord as shown in the illustration. Wind 2¾ turns counterclockwise around the tuning shaft with the turns progressing toward the front of the chassis. After string is installed, stretch the tension spring and fasten free end of cord to spring.



REPLACEMENT PARTS LIST

NOTICE: There is o model number label on the chassis. This label identifies the radio as to chassis, diol and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

		LIST PRICE
12A479	5" PM Speaker	$4.40
3A435	Molded Octal Tube Socket	.15
55X321	Cabinet, Plastic	4.90
14X411	Grille Cloth	.25
10A297	Knob	.10
13X328	Line Cord and Plug Assembly	.85

TRANSFORMERS AND COILS

T-1	9A1943	Loop Antenna Assembly	1.35
T-2	9A1914	Oscillator Coil Assembly	.85
T-3	9A1941	1st I-F Trans. Assembly	1.65
T-4	9A1942	2nd I-F Trans. Assembly	1.65
T-5	51X135	Output Transformer	1.50

R-4	36X373	500 K	Volume Control & Switch	
R-5	B85106	10 meg	0.5	Carbon
R-6, R-7	B84474	470 K	0.5	Carbon
R-8	B83151	150	0.5	Carbon
R-10	B83270	27	0.5	Carbon
R-11	C85152	1500	1.0	Carbon

DIAL AND DRIVE ASSEMBLY

15X242	Pointer	
26X508	Drive Shaft	
19X192	"C" Washer	
10X66	Drive Cord Assembly	
28X113	Drive Cord Tension Spring	
7A217	Pilot Light Socket Assembly	
7A103	No. 47 Pilot Light	
58X701	Dial Glass	

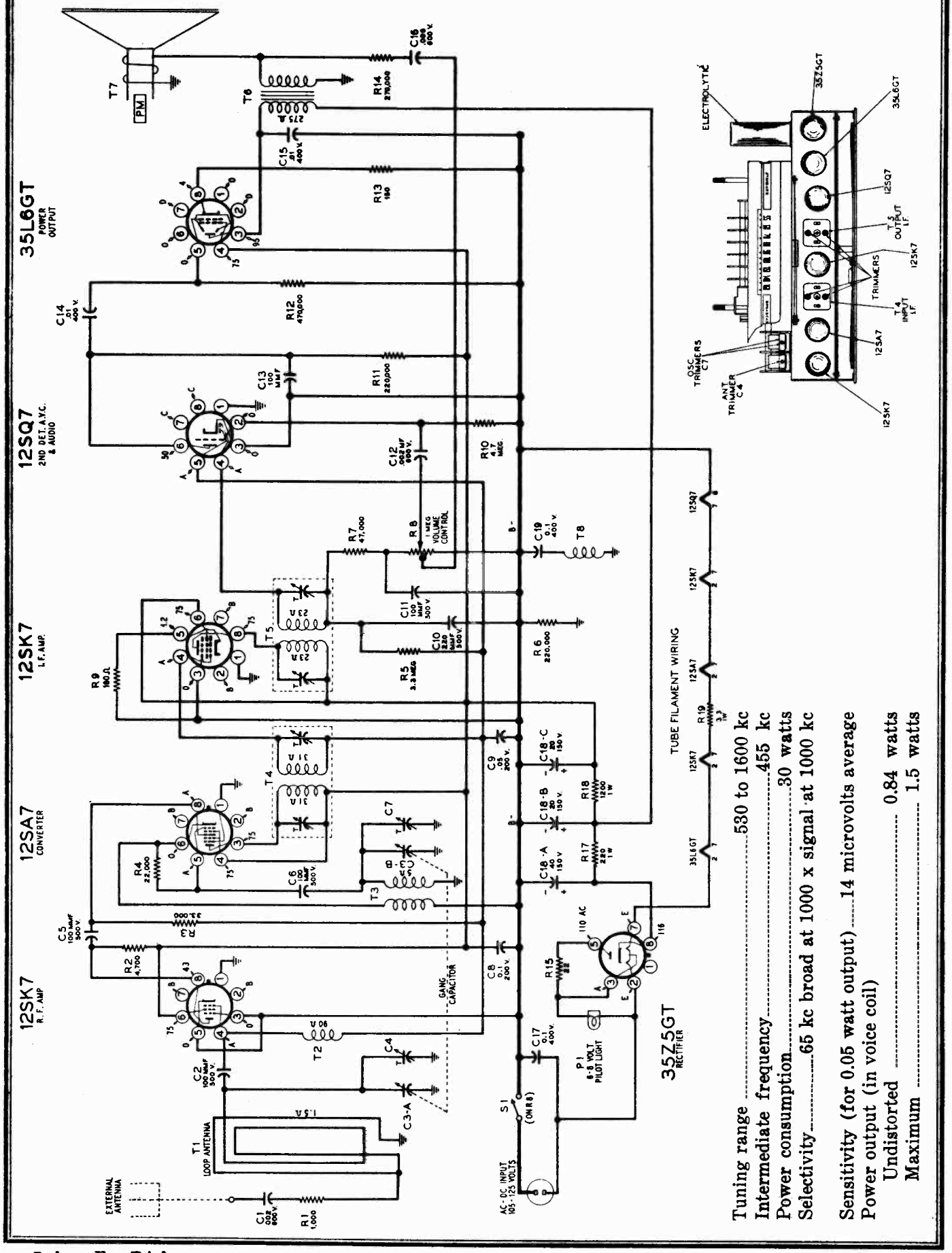
CAPACITORS

C-2A, C-2B, C-2C, C-2D	14A199	Gang Condenser Assembly	
C-5, C-6		Part of T-3 (1st I-F Trans. Assembly)	
C-7, C-8		Part of T-4 (2nd I-F Trans. Assembly)	
C-9, C-12	47X468	220 mmf	Molded
C-11, C-13	B66502	.005 mf 200 V	Tubular
C-14	D66502	.005 mf 400 V	Tubular
C-16	D66503	.05 mf 400 V	Tubular
C-17A, C-17B	45X363	40 mf 150 V Dry 40 mf 150 V Electrolytic Con.	
C-18	B66503	.05 mf 200 V	Tubular

RESISTORS

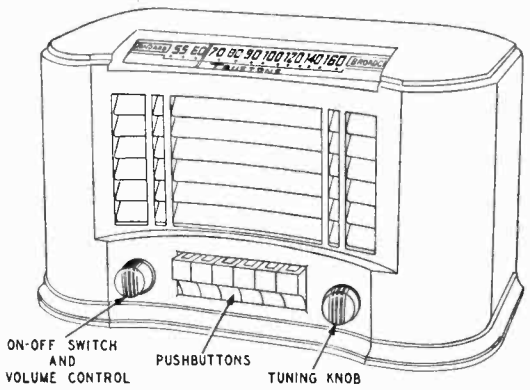
		OHMS	WATTS	
R-1	B84223	22 K	0.5	Carbon
R-2	B85225	2.2 meg.	0.5	Carbon

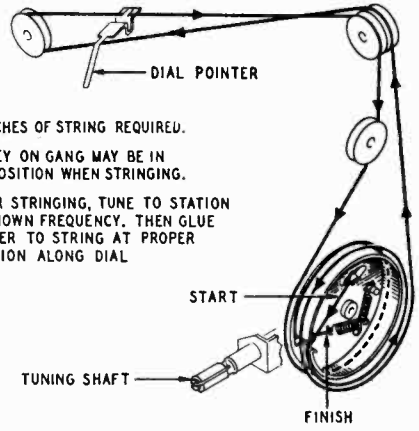
WESTERN AUTO SUPPLY CO. MODEL D2815



Tuning range ..... 530 to 1600 kc
Intermediate frequency ..... 455 kc
Power consumption ..... 30 watts
Selectivity ..... 65 kc broad at 1000 x signal at 1000 kc

Sensitivity (for 0.05 watt output) ..... 14 microvolts average
Power output (in voice coil)
Undistorted ..... 0.84 watts
Maximum ..... 1.5 watts





1 60 INCHES OF STRING REQUIRED.

2 PULLEY ON GANG MAY BE IN ANY POSITION WHEN STRINGING.

3 AFTER STRINGING, TUNE TO STATION OF KNOWN FREQUENCY. THEN GLUE POINTER TO STRING AT PROPER POSITION ALONG DIAL

ALIGNMENT PROCEDURE

(Refer to Chassis View)

- Output meter across 3.2-ohm output load.
- Volume control at maximum.
- Connect ground post of signal generator to B— of radio.
- Align for maximum output. Reduce input as needed to keep output near 0.4 volts.

SIGNAL GENERATOR			*TUNER SETTING*	*ADJUST FOR MAXIMUM OUTPUT (in order shown)*
Frequency	*Dummy Antenna*	*Connection to Radio*		
455 kc	0.1 mf	Stator of antenna section of gang	Rotor full open (plates out of mesh)	Trimmers on output and input I.F. cans
1600 kc	0.1 mf	Stator of antenna section of gang	Rotor full open (plates out of mesh)	Oscillator trimmer C7
1400 kc	200 mmf	External antenna clip	1400 kc	Antenna trimmer C4

COILS AND TRANSFORMERS

T1	C-201-10908-1	Loop antenna assembly (includes cabinet back, capacitor C1 and resistor R1) Specify color
T2	A-16A-10792	R.F. choke coil
T3	A-13D-10661	Oscillator coil
	or	
	A-13D-12082	Oscillator Coil
T4	B-13B-10091-1	Input I.F. transformer complete in can. Range of trimmers: 45-85 mmf each.
T5	B-13B-10092-1	Output I.F. transformer complete in can. Range of trimmers: 43-79 mmf each.
	B-2H-12121	Shield can—Fits over can on output I.F. coil above.
T6	B-12C-10623	Output transformer for speaker
T8	A-16A-12164	I.F. choke coil

CAPACITORS *

Ref. No.	Part No.	Description
C3A,B, C4,C7	B-8A-10827	Two gang condenser assembly, including antenna and oscillator trimmers. Range of gang: 15-452 mmf (ant.), 10-162 mmf (osc.).
C18-A,B,C	A-8C-10077	Electrolytic, for 60 cycles; 40 mf x 150 volts, 20 mf x 150 volts, 20 mf x 150 volts.
C9	C-8D-10770	.05 mf x 200 volts tubular.
C8	C-8D-10771	.1 mf x 200 volts tubular.
C17-19	C-8D-10760	.1 mf x 400 volts tubular.
C16	C-8D-10785	.006 mf x 600 volts tubular.
C1,12	C-8D-10778	.002 mf x 600 volts tubular.
C14,15	C-8D-10761	.01 mf x 400 volts tubular.
C10	C-8F3-10	220 mmf x 500 volts mica.
C2,5,6,11,13	C-8F3-8	100 mmf x 500 volts mica.

RESISTORS *

R8,S1	A-10A-11603	Volume control (1 megohm) and switch.
R2	C-9B1-70	4700 ohms, ½ watt, 10%
R4	C-9B1-78	22K ohms, ½watt, 10%
R5	C-9B1-34	3.3 megohms, ½ watt, 20%
R11	C-9B1-90	220K ohms, ½ watt, 10%
R3	C-9B1-80	33K ohms, ½ watt, 10%
R14	C-9B1-91	270K ohms, ½ watt, 10%
R9	C-9B1-53	180 ohms, ½ watt, 10%
R15	C-9B1-3	22 ohms, ½ watt, 20%
R18	C-9B2-63	1200 ohms, 1 watt, 10%
R19	C-9B2-44	33 ohms, 1 watt, 10%
R12	C-9B1-94	470K ohms, ½ watt, 10%
R7	C-9B1-82	47K ohms, ½ watt, 10%
R17	C-9B2-54	220 ohms, 1 watt, 10%
R10	C-9B1-35	4-7 megohms, ½ watt, 20%
R13	C-9B2-52	150 ohms, ½ watt, 10%
R6	C-9B1-90	220K ohms, ½watt, 10%
R1	C-9B1-62	100 ohms, ½ watt, 10%

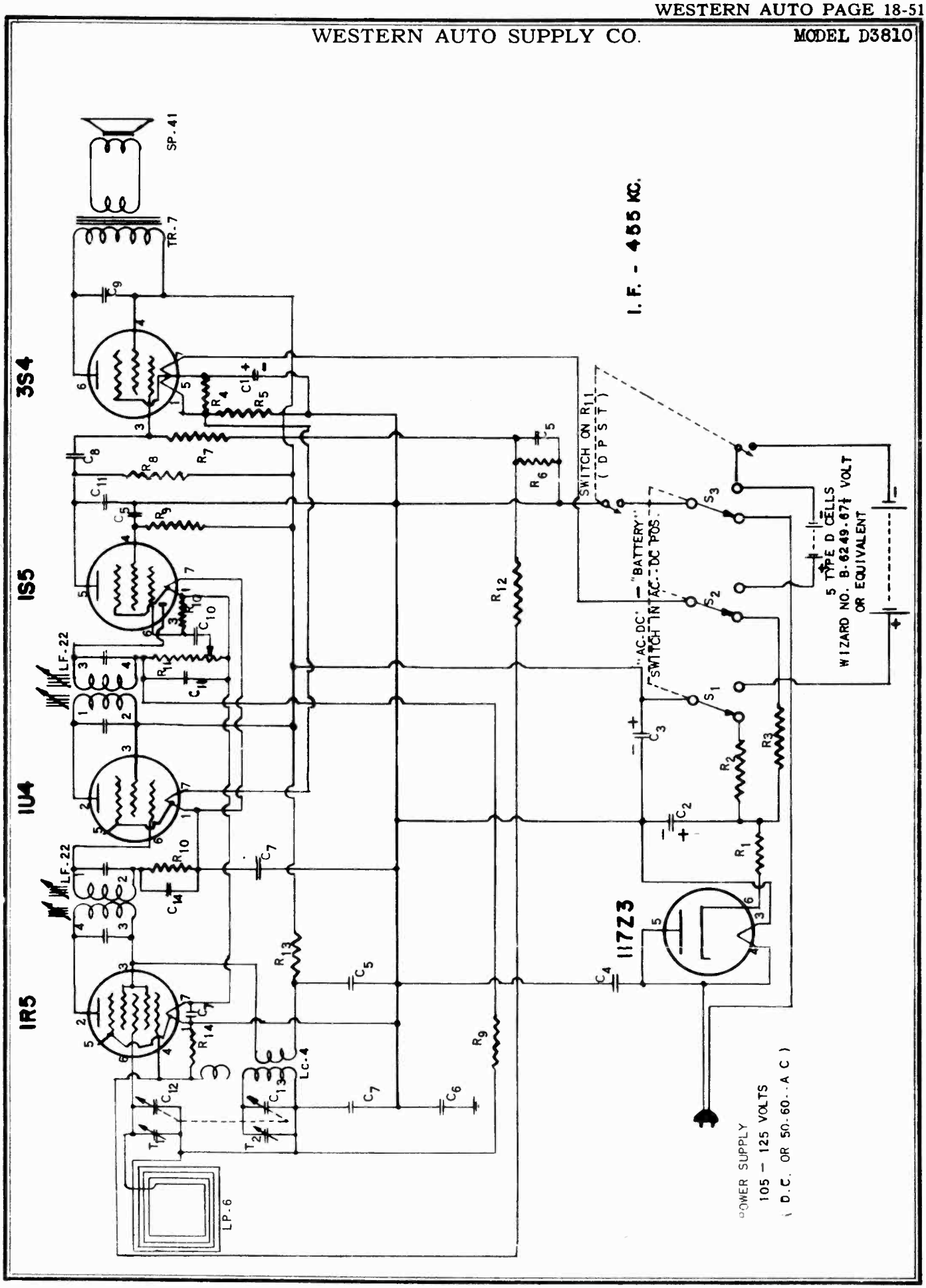
DIAL AND TUNING PARTS

Ref. No.	Part No.	Description
	B-6D-13065-1	Dial scale
	A-6A-10609	Diffuser
	B-2M-7758	Snap-in rivet, for diffuser (2 used)
	A-2G-10639	Dial pointer
	B-53A-10989	String for dial pointer (60").
	A-49A-10887	Spring for dial pointer string
	A-55A-10093	Socket assembly, for dial light
P1	A-46A-10793	Dial light bulb, 6-8 volts, T-47
	A-3C-10641	Spacer, brass (on extreme left)
	A-3C-10640	Spacer, brass (5 used)
	A-2C-10658	Cam
	A-2C-10611	Washer, D-D, on sides of cams
	29E-1812	Spring washer, on cam shaft
	A-3F-10656	Locking screw for cams
	A-2C-10654	Retainer yoke
	A-2C-10655	Cam yoke
	A-2L-10610	Stop arm
	200-10653	Lever assembly (arm and roller)
	A-2C-10607	Gear segment
	A-3B-10643	Gear bushing
	A-3C-10636	Coupling pin on gear segment
	A-49A-10646	Drum spring, on gear coupling pin
	A-3A-10651	Tuning shaft
	A-3L-7192	Pinion gear on tuning shaft
	A-49A-12403	Lever spring

MISCELLANEOUS

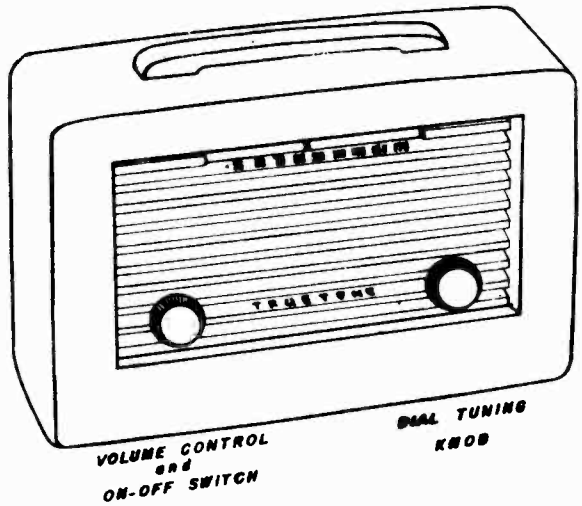
T7	B-18A-10647	P.M., 6" x 4' oval
	A-15B-10440	Socket, octal (for all tubes but 12SK7)
	A-15C-11201	Socket, octal, laminated (for 12SK7)
	B-15B-10076	Mounting plate, for electrolytic
	B-14M-13395	Line cord and plug
	B-2M-11205	Snap-in rivets, for mounting back (4 used)
	A-2M-10096	Split tee-pins, for mounting back (2 used)
	5C-10010-36	Cabinet, Walnut
	B-5B-10016-37	Knob, volume and tuning, walnut
	B-5A-10648-37	Pushbutton, walnut
	A-25B-10736	Rubber feet for cabinet
	A-23L-10934	Station call letters, one set
	A-6C-10819	Acetate tabs, for pushbuttons
	A-2H-10715	Tube shield (used with metal-base 12SA7GT tube)
	A-2H-11271	Tube shield (used with bakelite-base 12SA7GT tube)

WESTERN AUTO SUPPLY CO. MODEL D3810



MODEL D3810

WESTERN AUTO SUPPLY CO.



ALIGNMENT PROCEDURE

- Output meter across 3.5 ohm output load.
- Volume control at maximum for all adjustments.
- Align for maximum output. Reduce input as needed to keep output near 0.4 volts.

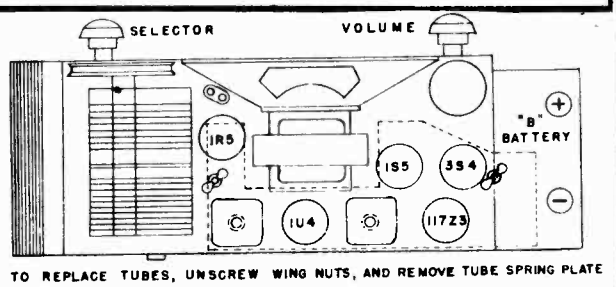
SIGNAL GENERATOR				*SETTING TUNER*	*ADJUST TRIMMERS TO MAXIMUM OUTPUT (in order shown)*
Frequency	*Coupling Factor*	*Connection to Receiver*	*Ground Connection*		
455 kc	.1 mfd	1R5 Grid	B—	Rotor full open (Plates out of mesh)	Input and output trimmers on IF cans
1700 kc	.1 mfd	1R5 Grid	B—	Rotor full open (Plates out of mesh)	Oscillator trimmer T2
1500 kc		Radiating Loop		1500 kc*	Antenna trimmer T1

* Five markings on the dial bracket represent respectively 530 kc., 600 kc., 1000 kc., 1500 kc., and 1700 kc., reading from left to right. These points are to be used for the alignment of the receiver.

POWER SUPPLY

This receiver is designed to operate on either an A.C. or D.C. power supply. The following operation ratings should be observed:

Voltages.....105 - 125 Volts, A.C. or D.C.

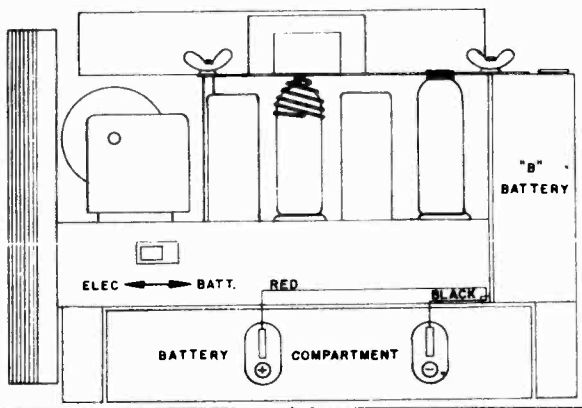


TO REPLACE TUBES, UNSCREW WING NUTS, AND REMOVE TUBE SPRING PLATE

The battery supply to be used with this receiver is as follows:

"A" supply ..... 7½ volts. Use five type "D" flashlight cells; Wizard No. B-6732 or Burgess No. 2 or Eveready No. 950 or equivalent.

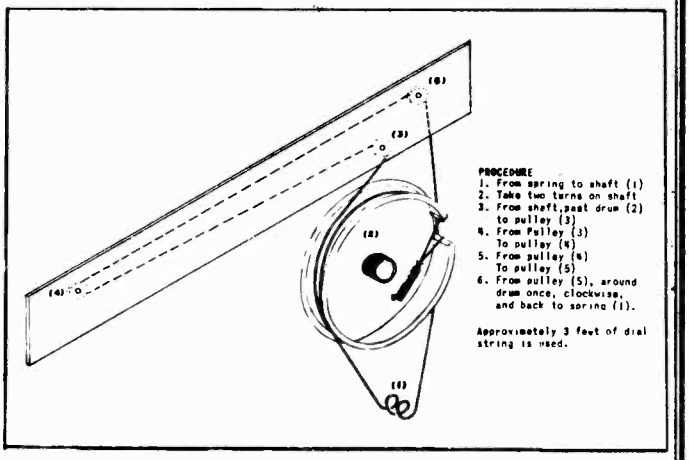
"B" supply ..... 67½ volts. Use Wizard No. B-6249 or Burgess No. XX45 or Eveready No. 467 or equivalent.



WESTERN AUTO SUPPLY CO. MODEL D3810

ELECTRICAL SPECIFICATIONS

Power Supply	105-125 volts DC or 50-60 cycles AC 15 watts
Batteries	A—7½ volts. 50 ma. B—67½ volts. 8 ma. average.
Frequency Range	530 to 1700 kc.
Intermediate Freq.	455 kc.
Tuning	Two-gang capacitor
Antenna	Built-in loop
Speaker	4 inch PM; voice coil Impedance 3.5 ohms.
Power Output	80 milliwatts undistorted 140 milliwatts maximum
Sensitivity	500 microvolts per meter for 50 milliwatt output
Selectivity	55 kc broad at 1000 times signal at 1000 kc.



Replacement of Drive Cord

REPLACEMENT PARTS LIST

When ordering parts, specify part number, model number and series.

CAPACITORS

Ref. No.	*Part No.*	*Description*
C1, C2, C3,	CE 12	{125 mfd, 10 volt} Electrolytic {25 mfd, 150 volt} condenser
C4	CP 503-5	.05 mfd, 400 volt, paper
C5	CP 103-2	.01 mfd, 150 volt, paper
C6	CP 104-2	.1 mfd, 200 volt, paper
C7	CP 503-2	.05 mfd, 150 volt, paper
C8	CP 202-3	.002 mfd, 200 volt, paper
C9	CP 502-2	.005 mfd, 400 volt, paper
C10	CP 102-3	.001 mfd, 200 volt, paper
C11	CM 101-1	.0001 mfd, 300 volt, mica
C12, C13	CV 10	Variable condenser, 2 gang
C14	CP 103-4	.01 mfd, 100 volt, paper

RESISTORS

R1	RC 180-1	18 ohms,	½ watt 20%
R2	RC 682-5	6800 ohms,	1 watt 10%
R3	RP 3	2650 ohms,	10 watt 5%
R4	RC 471-1	470 ohms,	½ watt 20%
R5	RC 821-2	820 ohms,	½ watt 10%
R6	RC 274-2	270,000 ohms,	½ watt 10%
R7	RC 225-1	2.2 megohms,	½ watt 20%
R8	RC 105-1	1 megohm,	½ watt 20%
R9	RC 335-1	3.3 megohms,	½ watt 20%
R10	RC 106-1	10 megohms,	½ watt 20%
R11	VC 6	1 meg·vol. control with switch	
R12	RC 105-2	1 megohm,	½ watt 10%
R13	RC 153-1	15,000 ohms,	½ watt 20%
R14	RC 104-2	100,000 ohms,	½ watt 10%

COILS AND TRANSFORMERS

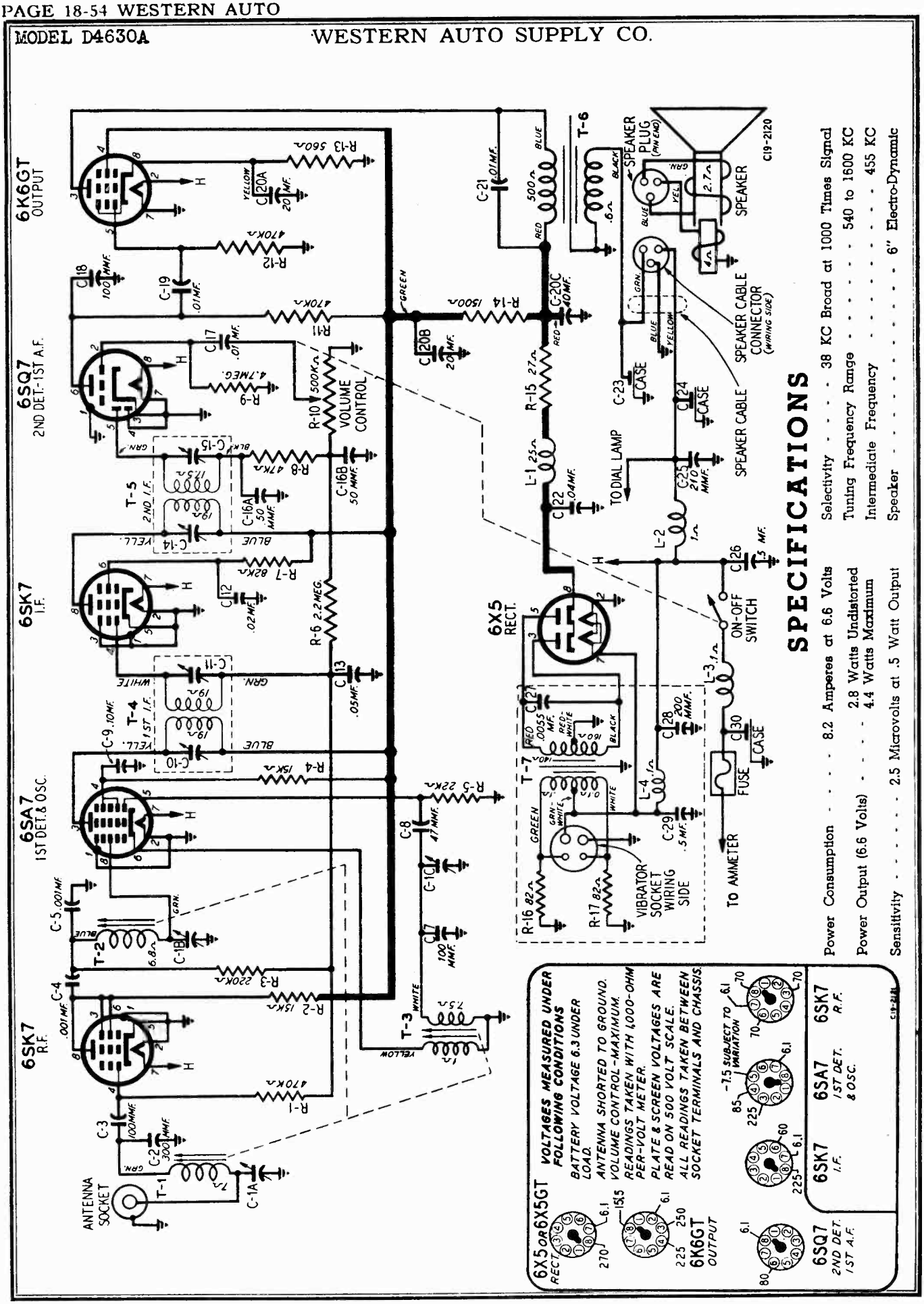
Ref. No.	*Part No.*	*Description*
	LC-4	Oscillator coil
	LF-22	IF transformer
	LP- 6	Loop antenna
	TR- 7	Output transformer

MISCELLANEOUS

Ref. No.	*Part No.*	*Description*
S1, S2, S3	SW-10	Three Pole Single Throw Switch
	SP-41	4 inch P.M. speaker
	PN-6	Pointer
	CR-2	Drive cord
	SG-1	Spring for drive cord
	KN-20-4	Knob
	BK- 20	Cabinet back (with hardware)
	CB-104A	Assembled cabinet (without back and handle)
	HA-2	Handle for cabinet (with springs and pins)
	AS-1	Assembled battery box

MODEL D4630A

WESTERN AUTO SUPPLY CO.



WESTERN AUTO SUPPLY CO.

MODEL D4630A
MODEL D4630B

SUPPLEMENTARY SERVICE DATA

TRUETONE MODEL D4630A

A 6" PM Dynamic speaker is used with some of the model "A" receivers. This speaker, complete with cable and plug is directly interchangeable with the 12A386 Electro Dynamic speaker listed in the Replacement Parts List.

The new speaker is shipped with some receivers in place of the speaker listed in the parts list.

DESCRIPTION OF NEW PART:

12A472 6" PM Dynamic Speaker complete with Cable & Plug

SUPPLEMENTARY SERVICE DATA

TRUETONE MODEL D4630B

Model "B" receivers of the above model use either an Electro Dynamic speaker 12A467 and Chassis Speaker Cable 13X556 or a PM Dynamic speaker 12A471 and Chassis Speaker Cable 13X556 in place of the Electro Dynamic speaker 12A386 and Chassis Speaker Cable 13X424 used with model "A" models.

The two new speakers are directly interchangeable when used with model "B" receivers.

DESCRIPTION OF NEW PARTS:

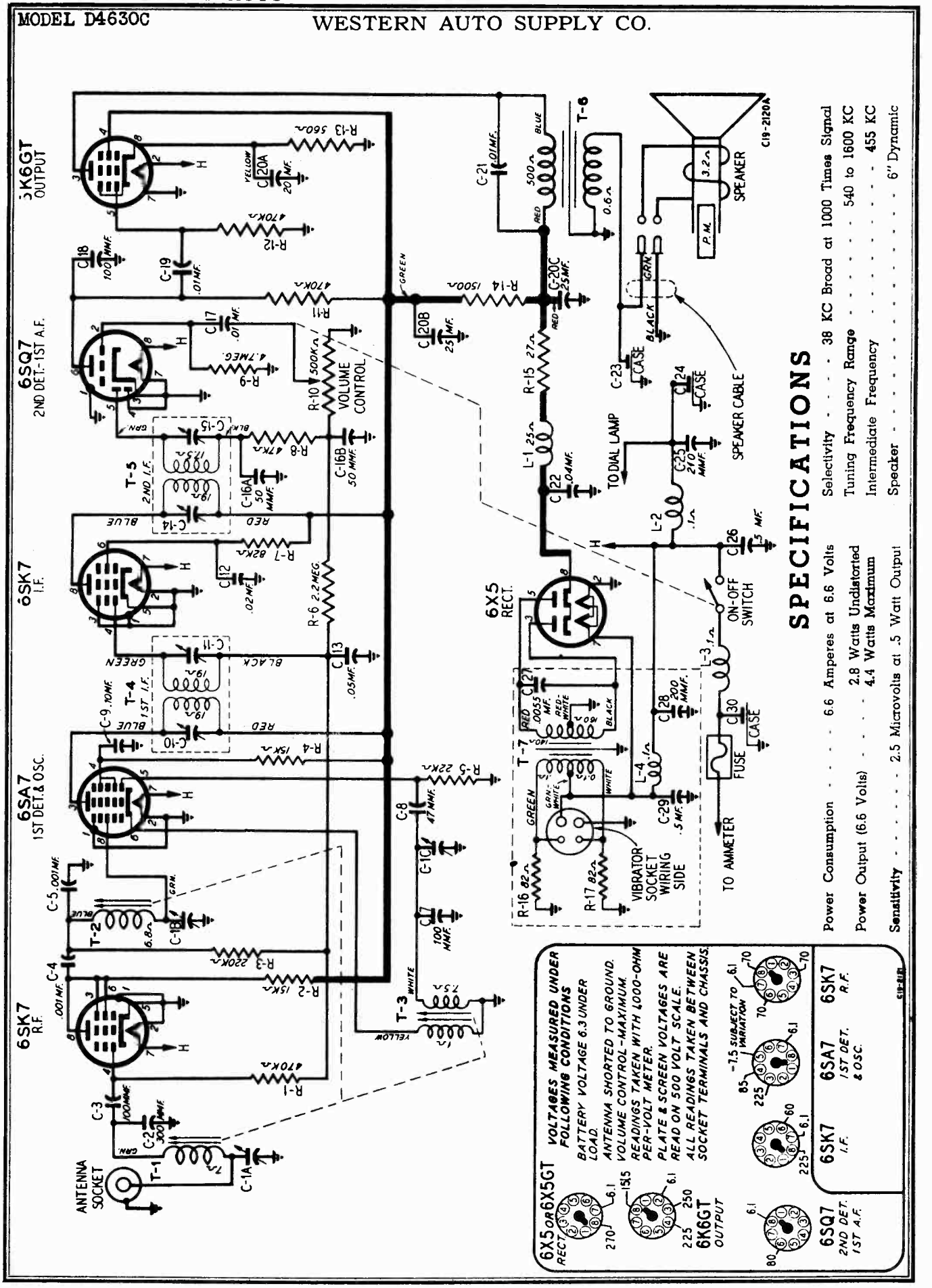
12A467 6" Electro Dynamic Speaker complete with Cable and Plug.

12A471 6" PM Dynamic Speaker complete with Cable and Plug.

13X556 10" Chassis Speaker Cable complete with Socket.

MODEL D4630C

WESTERN AUTO SUPPLY CO.

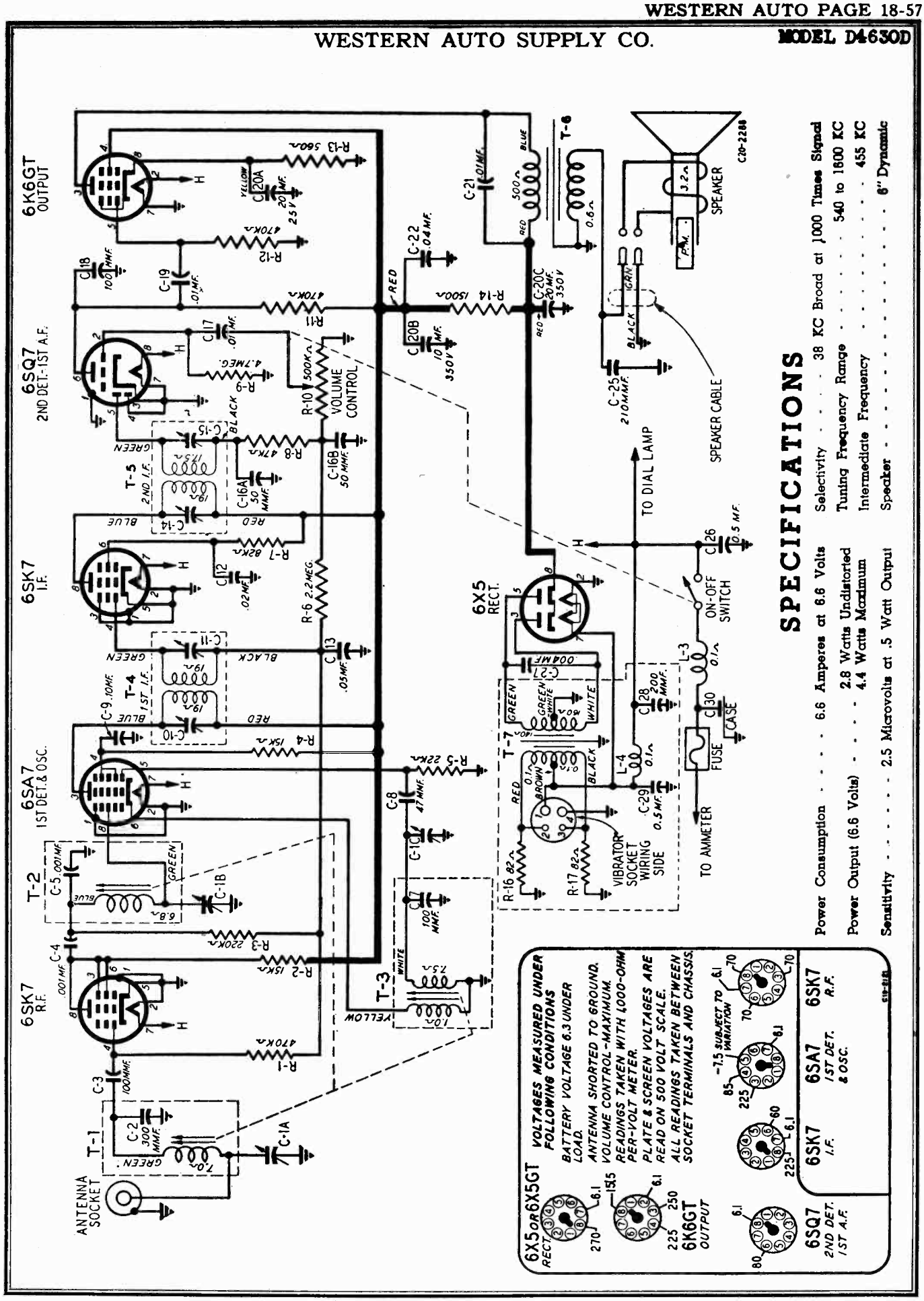


SPECIFICATIONS

Power Consumption	6.6 Amperes at 6.6 Volts
Power Output (6.6 Volts)	2.8 Watts Undistorted 4.4 Watts Maximum
Sensitivity	2.5 Microvolts at .5 Watt Output
Selectivity	38 KC Broad at 1000 Times Signal
Tuning Frequency Range	540 to 1600 KC
Intermediate Frequency	455 KC
Speaker	6" Dynamic

WESTERN AUTO SUPPLY CO.

MODEL D4630D

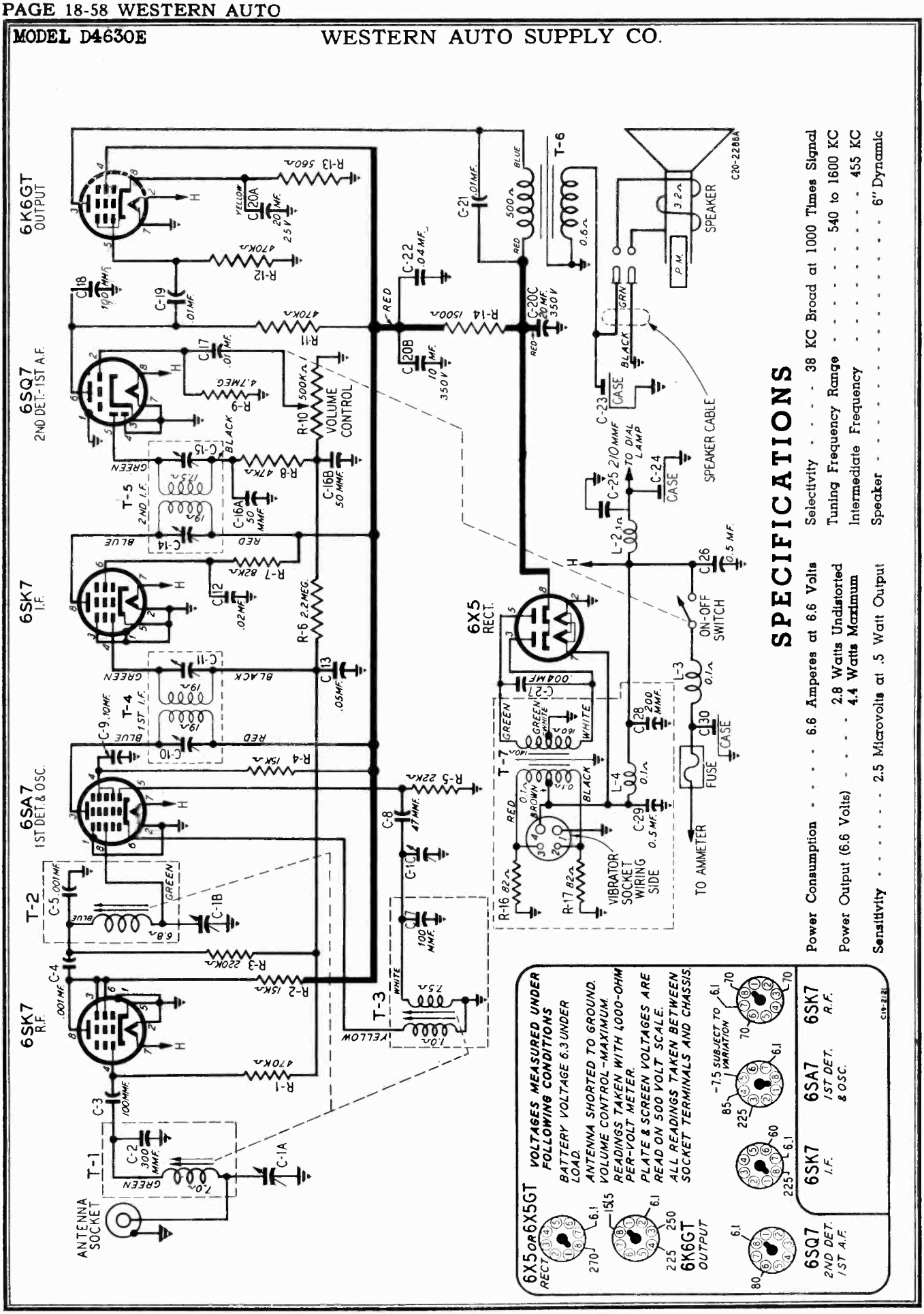


SPECIFICATIONS

Power Consumption	6.6 Amperes at 6.6 Volts
Power Output (6.6 Volts)	2.8 Watts Undistorted 4.4 Watts Maximum
Sensitivity	2.5 Microvolts at .5 Watt Output
Selectivity	38 KC Broad at 1000 Times Signal
Tuning Frequency Range	540 to 1600 KC
Intermediate Frequency	455 KC
Speaker	6" Dynamic

MODEL D4630E

WESTERN AUTO SUPPLY CO.



SPECIFICATIONS

Power Consumption - - - - 6.6 Amperes at 6.6 Volts	Selectivity - - - - 38 KC Broad at 1000 Times Signal
Power Output (6.6 Volts) - - - - 2.8 Watts Undistorted	Tuning Frequency Range - - - - - - - - 540 to 1600 KC
4.4 Watts Maximum	Intermediate Frequency - - - - - - - - - - - 455 KC
Sensitivity - - - - - - 2.5 Microvolts at .5 Watt Output	Speaker - - - - - - - - - - - - - - 6" Dynamic

WESTERN AUTO SUPPLY CO.

MODEL D4630E
MODEL D4630F

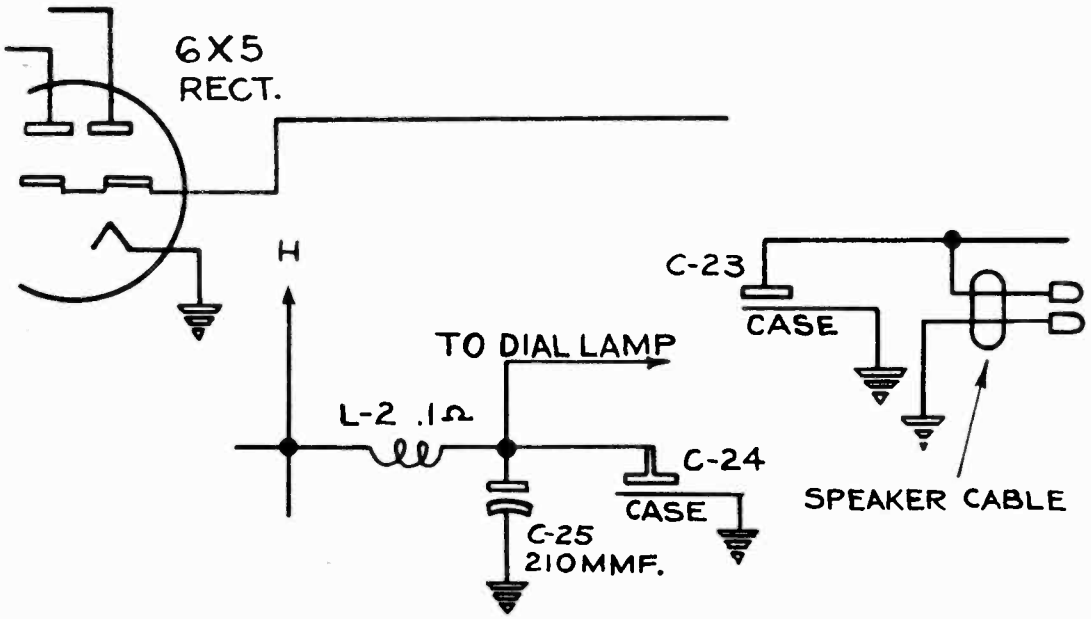
SUPPLEMENTARY SERVICE DATA
TRUETONE MODEL D4630-E

Model "E" chassis of this model differ from the Model "D" of this model by the addition of the following changes:

Parts List Changes:

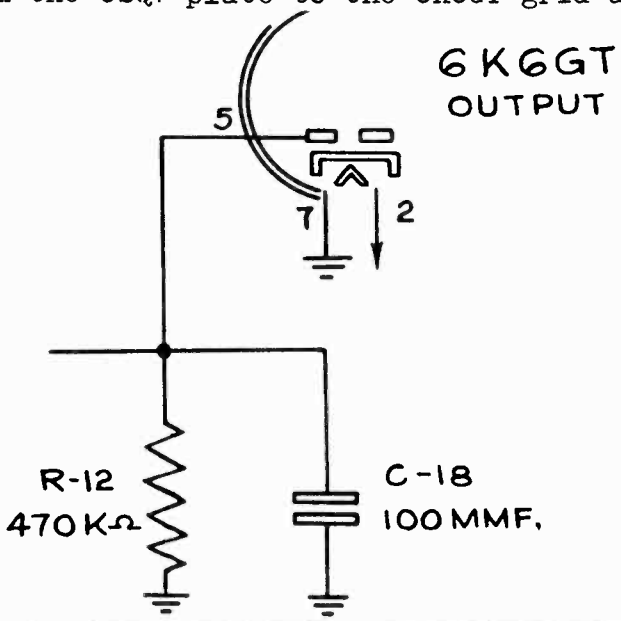
9A1369 - L-2 Field & Pilot Light Filter Reactor
C-23, C-24 (Part of chassis case)

The changes are shown schematically below:



SUPPLEMENTARY SERVICE DATA
TRUETONE MODEL D4630-F

Model "F" chassis of this model differ from the Model "E" of this model by the repositioning of the 100 mmf condenser (C-18) from the 6SQ7 plate to the 6K6GT grid as shown below.



MODELS D4630A, D4630B, D4630C, D4630D, D4630E, D4630F

WESTERN AUTO SUPPLY CO.

ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:

A Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output Indicating Meter—Non-Metallic Screwdriver.

Dummy Antenna—.05 mf., See Note A.

SIGNAL GENERATOR FREQUENCY SETTING	SIGNAL GENERATOR CONNECTION AT RADIO	DUMMY ANTENNA	IRON CORE SETTING	ADJUST TRIMMERS TO MAXIMUM (See Figs. 3 and 4)
I.F. 455 KC	Control Grid (prong No. 8) 6SA7 1st Det. Tube	.05 mf.	Extreme Position out of Coil	1st I.F. (C10 & C11) 2nd I.F. (C14) & (C15)
OSCILLATOR 1600 KC	Antenna Cable See Note A	See Note A	Extreme Position out of Coil	Oscillator (C1C)
1400 KC ADJUSTMENT 1400 KC	Antenna Cable	See Note A	Tune to Max. Output with Tuning Knob	Int. (C1B) Ant. (C1A)

Reassemble Radio—Install in Car—Connect Car Antenna to Radio.

Car Antenna Readjustment—Tune in weak signal near 1400 KC—Readjust Antenna Trimmer C1A for maximum output.

Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

NOTE A—Insert the antenna cable plug in the antenna socket on the chassis. The total capacity of the antenna cable and dummy antenna should be 60 mmf. If the cable, for example, has a capacity of 30 mmf., use a 30 mmf. condenser for a dummy antenna. Connect the other end of the antenna cable through the dummy antenna capacity to the output of the signal generator.

CALIBRATION—To calibrate the radio see article "Calibrating the Radio"

LOCATING THE CONTROL UNIT ASSEMBLY

This auto radio is supplied with a Crowe control. This control, in conjunction with suitable control plates and mounting brackets, can be mounted in the instrument panel of practically all widely sold automobiles. If the control cannot be mounted in the instrument panel of the car, it may be mounted under the panel or on the steering column.

The control plates, dial assembly, brackets, knobs, and small items such as screws are put up in kit form for each make of automobile.

The tuning control unit, volume control fitting, and flexible shafts are packed with each radio.

Two 27 inch flexible shaft assemblies are supplied unless otherwise specified. Two 20 inch or 36 inch flexible shaft assemblies are available if needed.

First Attach Flexible Shafts to Control Units and Mount Units and Control Plate

The control plate and control units are mounted as explained in the instructions packed with the plate kit. The flexible shafts must be attached to the control units before they are attached to the radio. Attach the shafts by means of the knurled couplings.

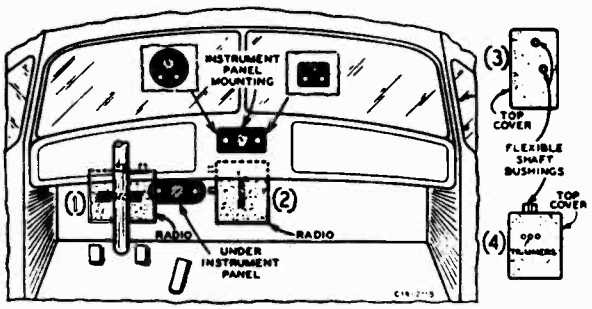


Fig. 1—Control Unit and Chassis Mountings

LOCATING THE RADIO AND DRILLING MOUNTING HOLES

The radio is to be mounted on the fire wall, as shown in Fig. 1, and is generally located over the steering column.

Position 1 is most desirable, position 2 is next best. Mounting positions 3 and 4 should be used only when absolutely necessary.

POSITION 1 — Radio mounted horizontally, with back cover against the fire wall and located over the steering column.

POSITION 2 — Radio mounted vertically, with back cover against the fire wall and located at middle of fire wall.

POSITION 3 — Radio mounted vertically, with side opposite shaft bushings against the fire wall. The radio may also be mounted horizontally in this position.

POSITION 4 — Radio mounted vertically, with small end against the fire wall. The radio may also be mounted horizontally in this position.

If the radio is located over the steering column (Position 1), it may be mounted vertically. Likewise, if the radio is located at the middle of the fire wall (Position 2) it may be mounted horizontally. If necessary to do so, the radio may be mounted on the right side of the fire wall, although this is generally not advisable.

In the middle position, the 27 inch flexible shaft assemblies furnished may be too long and it will be necessary to order the 20 inch shaft assemblies. The first step is to inspect the fire wall to determine at which point there is space available. The contours of the fire wall and the location of the car controls, wires, etc., will determine to a great extent the position of the radio. Lift the radio case up and temporarily hold it in the proposed position.

The radio should be mounted in such a way that the flexible shaft bushings are convenient to the control unit, and as high as possible.

WESTERN AUTO SUPPLY CO. MODELS D4630A, D4630B, D4630C, D4630D, D4630E, D4630F

SUPPRESSION OF MOTOR NOISE

The following procedure has been found to be effective in reducing motor noise to a satisfactory level in most cars. Follow the steps in the order given. Additional procedure, which may be required in exceptional cases of motor noise, is not covered here and will be found by referring to current literature on this subject.

GENERATOR CONDENSER — A generator condenser is required in all cases. Connect the condenser lead to the battery terminal of the generator. The case and mounting strap connect the other side of the condenser to ground. This unit must, therefore, be well grounded at its mounting.

CAUTION—In cars with automatic regulators, it is important not to connect the condenser across the field terminal. Most manufacturers at the present time have a recommendation for the proper post at which to connect the condenser.

DISTRIBUTOR SUPPRESSOR — A distributor suppressor will be required in most cases. Remove the high tension lead to the distributor. Insert a distributor suppressor and connect the wire to the other end of the suppressor (See Fig. 5). If this is not practical, cut the high tension lead close to the distributor and use a wood screw end type distributor suppressor in this line.

Withdraw Antenna Cable Plug

Turn on the radio and start the motor.

If motor noise is heard, proceed as follows:

BONDING CABLES, STEERING COLUMN, ETC.—Try grounding to the fire wall all cables and tubing which pass through it such as oil lines, gas lines, etc. It is also possible for the steering column, foot pedals, and brake lever to carry interference to the back of the fire wall at which point it may affect the radio. By means of a file, contact can be established between any of these parts and the fire wall or frame in order to determine whether such a ground will reduce the noise. To bond the parts to the fire wall or frame, clean the point of contact, wrap a length of one inch braided shielding around the part, and solder the connection. Then solder the end of the shielding to the fire wall or frame or ground it under a screw head if one is convenient.

Sufficient play should be left in the bonding shielding so that movement of the parts will not loosen this shielding.

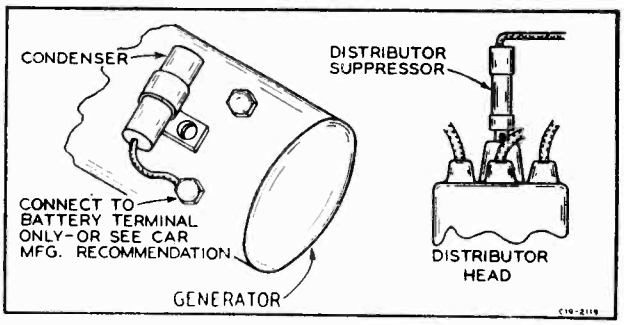


Fig. 5—Generator Condenser and Distributor Suppressor

Then Reinsert Antenna Cable Plug

If motor noise is heard when the antenna cable is reconnected, proceed as follows until the noise is satisfactorily reduced:

BYPASS CONDENSERS — Try a .5 mfd. bypass condenser from the ammeter to ground and see if interference is reduced. Install this condenser permanently if there is an improvement.

In like manner, try a .5 mfd. condenser from car fuse to ground, switch to ground, tail light and stop light connections to ground, windshield wiper and various other 6 volt connections to ground, noting what effect these condensers have on the noise pickup.

Try a .5 mfd. condenser between the point at which the dome light lead leaves the pillar post and ground.

Try a .5 mfd. condenser from the "Hot" side of the coil primary to ground.

The electric gauges used for oil, water, and gas are often a source of interference and bypass condensers should be tried. The condenser should usually be connected to the end of the line nearest the measuring device rather than at the instrument panel.

HIGH AND LOW TENSION LEADS—In some cases, the high and low tension leads between the coil and distributor are run close together. In some cars, they are in the same conduit. If this is the case, remove the low tension lead from this conduit. In any event, keep the high and low tension leads as far apart from each other as possible. If separating the two leads is not sufficient, shield and ground the shield of the low tension lead.

GROUNDING MOTOR AND OTHER PARTS—The motor must, in every case, be well grounded to the frame of the car. If it is not, use a very heavy braided lead for this purpose, similar to a storage battery ground lead. In like manner, it may be necessary to check the grounding of the metal fire wall, instrument panel, transmission, radiator, hood, and muffler to the frame of the automobile. To obtain a good electrical connection, scrape off the paint, if necessary, at the point where ground contact is made.

PEENING ROTOR ARM—In extreme cases of motor noise, it is advisable to peen the distributor rotor arm, that is, increase the length of the arm by using a small machinist's hammer. This will lessen the gap between the rotor arm and the stationary contacts thus reducing the spark. Be sure, after peening the arm, that it does not strike the stationary contacts.

SPARK PLUG SUPPRESSORS—If motor noise persists, spark plug suppressors must be installed. One suppressor is put on each plug. These are not regularly supplied with the radio and must be purchased extra. Ninety-five percent of all cars will not require spark plug suppressors.

Care should be taken that a good mechanical and electrical connection is made between the spark plugs, suppressors, and plug wires.

WHEEL OR BRAKE STATIC—To determine if noise is being caused from this source, set the car in motion; then with the motor shut off and the clutch disengaged, apply the brakes. If the noise stops, the source of the static is in the wheels. The use of a front or rear wheel static eliminator will generally end the trouble.

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IMPORTANT—Locate the chassis in such a manner that the flexible shafts will have a minimum amount of bending. In general, there should not be more than two bends. The bends should be of a large radius. The larger the radius of the bends, the easier the controls will operate.

Other points to consider in choosing the radio location are as follows: Mount the radio case as high as possible to avoid interference with the feet of the people in the front compartment. Mount it also in such a way as to avoid interference with the pedals, cowl ventilator, etc.

Locating and Drilling the Mounting Holes

Having decided on the position of the radio, next locate the mounting holes. There are 8 mounting holes provided in the radio case, 2 in each side and 2 in each end, to which the "J" mounting bolts can be attached. Since only 2 holes are used, there are various ways the radio can be mounted.

In all types of mountings, the "J" bolts must always be on opposite sides of the radio case.

For mountings 1 and 2 (with back cover against fire wall), the "J" bolts should be positioned diagonally. By that is meant if one is mounted at the left and over the radio case, the other should be at the right, under the case.

For mountings 3 and 4, the "J" bolts should be fastened to the holes nearest the fire wall.

When it is determined which mounting holes are to be used and which position the radio is to be mounted in, select the proper two holes as indicated on the template. For example, if the radio is to be mounted in position 1, use the template holes joined by either of the lines numbered 1.

Hold the template in position on the fire wall and punch mark the centers for the desired mounting holes. Before drilling the holes, make sure there is nothing on the motor side of the fire wall that will be damaged by the drilling. Then drill the two 5/16 inch holes.

If there is insulating material such as cardboard or paint on the engine side of the fire wall, the cardboard should be cut away and paint should be scraped away so that the lock washer on the mounting bolt makes good electrical contact with the metal portion of the fire wall.

DO NOT MOUNT THE RADIO AT THIS TIME.

Attaching Flexible Shafts to Radio

The flexible shafts MUST BE ATTACHED TO THE CONTROL UNITS ON THE INSTRUMENT PANEL BEFORE THEY ARE ATTACHED TO THE RADIO.

Insert the spade ends (without coupling) of the flexible shafts into the correct shaft bushings (See Fig. 3) after loosening the 4 set screws in the bushings. Make sure that the spade ends of the shafts are properly fitted into the slotted receptacles. Do this by turning the control unit knob until it is felt that the spade end of the shaft has dropped all the way into position. Then tighten the set screws in the shaft bushings until they hold the casing of the flexible shaft securely.

ANTENNA

A shielded antenna cable (30 mmf. capacity) with bayonet connector plug is required.

The plug on the antenna cable is inserted in the socket at the side of the radio case as shown in Fig. 3. The wire at the other end of the cable is connected to the antenna.

LOW CAPACITY ANTENNA

This radio is designed for a low capacity car antenna. The total capacity of antenna and shielded cable should be 40 to 70 mmf.

Types of Low Capacity Antennas—"Fishpole" type, such as door hinge and cowl; over-the-roof types which are short and are mounted quite a distance from the metal roof of the car.

Mount the antenna on the same side of the car as the radio.

HIGH CAPACITY ANTENNA

If this radio is to be installed with a high capacity car antenna (70 to 500 mmf. total capacity of antenna and shielded cable), a 24 inch shielded adapter extension cable is necessary. The adapter is inserted in the socket at the side of the radio case. Then the antenna cable plug is inserted in the socket at the other end of the adapter.

Types of High Capacity Antennas—Over-the-roof types which are long and are mounted close to the metal roof of the car; ordinary built-in roof antennas (not metal roof). Under-car antennas (these are usually high capacity) are not recommended for this radio.

ANTENNA CABLE

CAUTION—Be careful not to bend the antenna cable too sharply or to clamp it tightly as the small wire inside the cable may be broken.

Keep the antenna cable as far away from car wiring as possible and ground the pigtail of the antenna cable shield at the antenna end, otherwise ignition noise may be picked up. The length of the pigtail from the grounding point to the end of the antenna cable should be kept as short as possible, preferably not over one inch.

For the "fish pole" and over-the-roof type antennas, the antenna lead must be shielded the entire distance from the radio to the point where the lead goes through the car body to the outside.

When the antenna cable is connected to an antenna lead coming down the pillar post, the shielded cable should be pushed several inches up into the pillar post.

MOUNTING SPEAKER BEHIND INSTRUMENT PANEL GRILLE OR ON FIRE WALL

Instrument Panel Mounting

Most late model automobiles have a grille in the instrument panel behind which a speaker can be mounted. The speaker of this radio is intended to be mounted in this manner.

In Fig. 2 is shown methods of mounting which are applicable, with minor changes, to most cars. The strap bracket, only a part of which is

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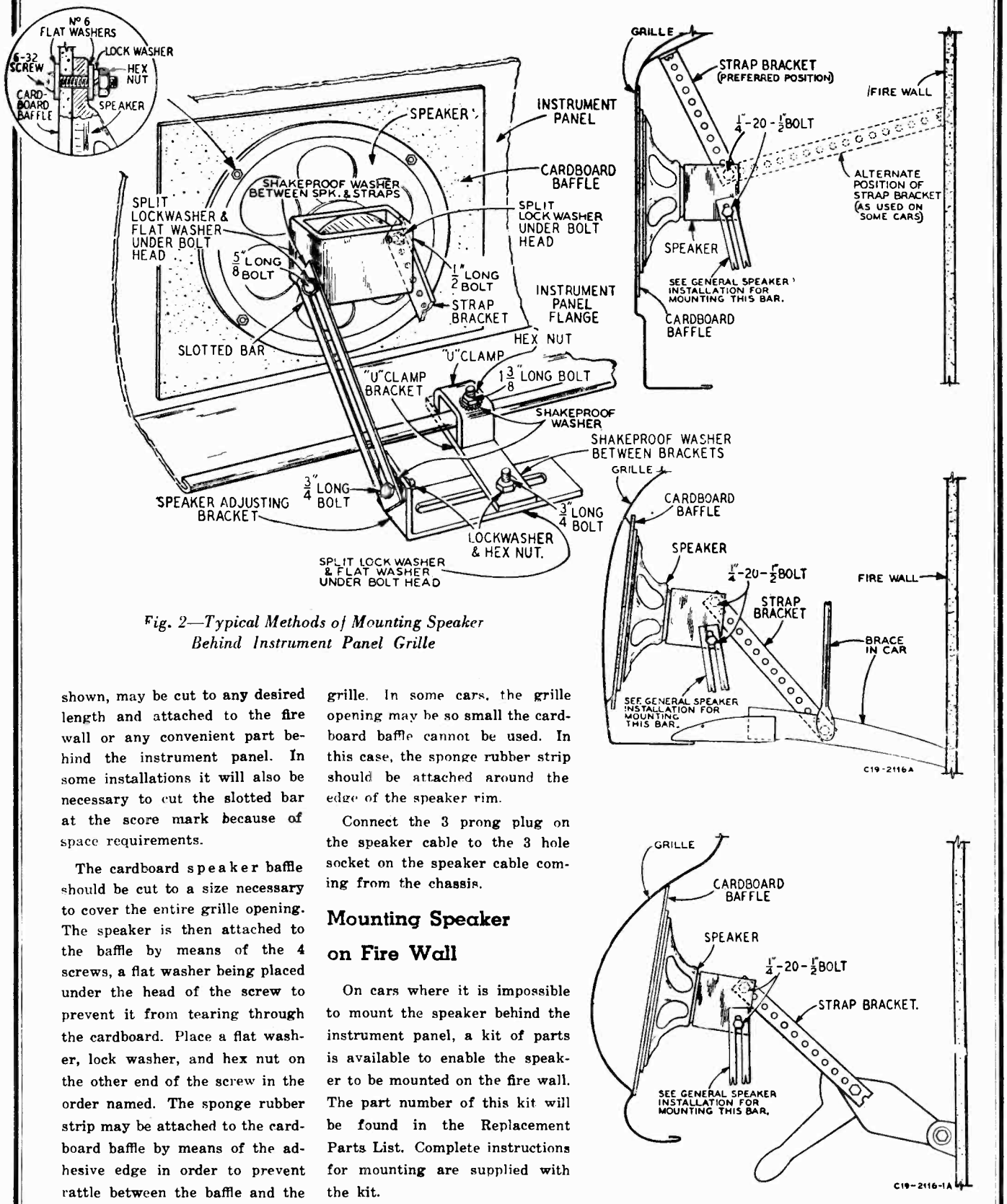


Fig. 2—Typical Methods of Mounting Speaker Behind Instrument Panel Grille

shown, may be cut to any desired length and attached to the fire wall or any convenient part behind the instrument panel. In some installations it will also be necessary to cut the slotted bar at the score mark because of space requirements.

The cardboard speaker baffle should be cut to a size necessary to cover the entire grille opening. The speaker is then attached to the baffle by means of the 4 screws, a flat washer being placed under the head of the screw to prevent it from tearing through the cardboard. Place a flat washer, lock washer, and hex nut on the other end of the screw in the order named. The sponge rubber strip may be attached to the cardboard baffle by means of the adhesive edge in order to prevent rattle between the baffle and the grille. In some cars, the grille opening may be so small the cardboard baffle cannot be used. In this case, the sponge rubber strip should be attached around the edge of the speaker rim.

Connect the 3 prong plug on the speaker cable to the 3 hole socket on the speaker cable coming from the chassis.

Mounting Speaker on Fire Wall

On cars where it is impossible to mount the speaker behind the instrument panel, a kit of parts is available to enable the speaker to be mounted on the fire wall. The part number of this kit will be found in the Replacement Parts List. Complete instructions for mounting are supplied with the kit.

MODELS D4630A, D4630B, D4630C, D4630D, D4630E, D4630F

WESTERN AUTO SUPPLY CO.

FINAL INSTALLATION ITEMS

Before Mounting Radio

Before mounting the radio to the fire wall, it is advisable in most cases to complete the wiring connections.

Battery Cable and Fuse

The battery connection is made at the ammeter. The end of the battery cable with the connecting lug is secured to one of the posts at the back of the ammeter in the instrument panel. The other end of the cable with the fuse receptacle connects to the battery cable from the radio after the fuse has been inserted. A 14 ampere fuse is used.

Dial Lamp Cable

Insert the dial lamp assembly in the receptacle as indicated in Fig. 3. The dial lamp used in this unit is a 6-8 volt automobile type lamp (Bulb No. 51).

Adjusting Antenna Trimmer

After the antenna is connected, tune in a weak signal at approximately 1400 KC with the volume control about three-fourths on. Turn the adjusting screw of the antenna trimmer (CIA) up or down until maximum output is obtained. See Fig. 3 for location of this trimmer.

Bolting Radio in Place

Insert the "J" mounting bolts through the mounting holes from the driver's side of the fire wall. Then from the motor side, place a lock-washer, flat washer, hex nut, and lock nut loosely on one bolt (See Fig. 3). On the other bolt, place the same parts except for the lock-washer.

Now raise the radio into position and hook the two "J" bolts into the mounting holes in the case.

Tighten the nut on one bolt until it just begins to feel snug. Then tighten the nut on the other bolt a like amount.

Then from the inside, position the radio. Next tighten one of the nuts a slight additional amount and then the other nut a like amount. See if radio is still properly positioned and then complete the tightening of the nut on both mounting bolts.

After the radio is in place, fasten the flexible shafts and electrical cables in position at the nearest convenient point.

Calibrating the Radio

To calibrate the radio, tune in a station of known frequency, loosen the knurled nut at the tuning control clamp fitting and turn the flexible shaft with the fingers until the dial pointer indicates the frequency of the station being received.

Slide the flexible shaft in or out of the tuning control clamp fitting until a smooth action with a minimum of backlash is obtained.

The knurled nut should then be tightened with the fingers.

Readjusting Flexible Shafts

When the radio is in position on the fire wall, loosen the flexible shaft casing set screws on the chassis. Allow the casing to position itself so that it does not bind. Then retighten the set screws.

Replacing Tubes and Vibrator

To replace the tubes or vibrator, remove the screw at each end of the top cover. Pry off the cover. The tubes and vibrator are now accessible for replacement.

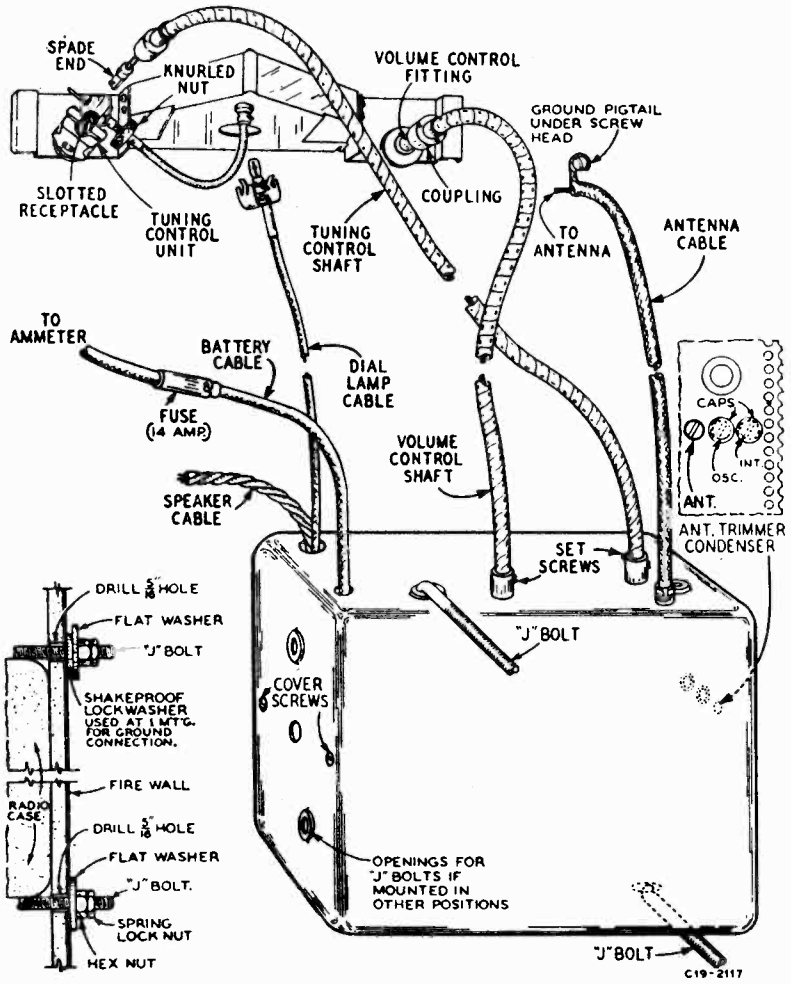
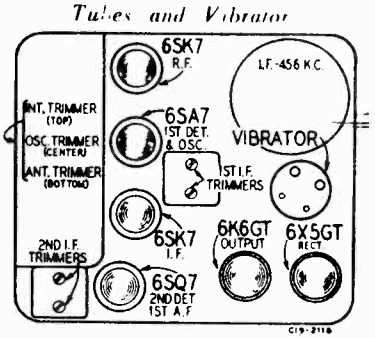


Fig. 3—General Installation View

Fig. 4—Location of Tubes and Vibrator



WESTERN AUTO SUPPLY CO. MODEL D4630A

REPLACEMENT PARTS LIST

NOTICE: There is a power rating label on the radio. This label specifies the power supply on which the radio may be used, and identifies the radio as to series, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

12A386	6" Electro-Dynamic Speaker, complete with Cable and Plug
	Cone and Voice Coil Assembly (Specify part number of Speaker and letters preceding part number stamped on the speaker)
12A384	5¼" Electro-Dynamic Speaker, complete with Cable and Plug
	Cone and Voice Coil Assembly (Specify part number of speaker and letters preceding part number stamped on the speaker)
3A303	Tube Socket—Octal (8 prong)
3A316	Vibrator Socket (4 prong) moulded
19A37	Vibrator
28X52	Spring Clamp for Vibrator
32X134	Shield for Filter Assembly
32X105	Shield for Power Transformer
34X300	Top Cover for Chassis Case less Name Plate
34X301	Bottom Cover for Chassis Case
28X48	Spring Clips to Ground Covers to Case

TRANSFORMERS AND COILS

9A1115	L-1	R-F Plate Reactor
9A1369	L-2	Field and Pilot Light Filter Reactor
9A1194	L-3	"A" Line Reactor
9A911	L-4	Vibrator "A" Line Reactor
	T-1, T-2, T-3	Antenna, Interstage, Oscillator Coils and Iron Cores are a part of the Tuning Assembly. Entire assembly must be ordered. See Tuning Assembly
9A1368	T-4	1st I-F Transformer and Can Assembly
9A1359	T-5	2nd I-F Transformer and Can Assembly
51X89	T-6	Output Transformer
53X232	T-7	Power Transformer

CAPACITORS

		CAPACITY	VOLTAGE	
17A159	C-1A, C-1B, C-1C	2.8-35 mmf, 10-90 mmf, 2.8-25 mmf	Antenna, Interstage, Oscillator	Trimmer
47X479	C-2	300 mmf		Silvered mica
47X476	C-3, C-18	100 mmf		Moulded
D56102	C-4	.001 mf	400 V	Tubular
46X317	C-5	.001 mf	200 V	Polystyrene
47X167	C-7	100 mmf		Ceramic
47X463	C-8	47 mmf		Moulded
D56104	C-9	.10 mf	400 V	Tubular
	C-10, C-11	Part of T-4 (1st I-F Transformer Assembly)		
D56203	C-12	.02 mf	400 V	Tubular
B56503	C-13	.05 mf	200 V	Tubular
	C-14, C-15	Part of T-5 (2nd I-F Transformer Assembly)		
47X112	C-16A, C-16B	.50 mmf, .50 mmf		Dual mica
B56103	C-17	.01 mf	200 V	Tubular
D56103	C-19	.01 mf	400 V	Tubular
45X296	C-20A, C-20B, C-20C	20 mf, 20 mf, 40 mf	25 V, 350 V, 350 V	Dry Electrolytic Capacitor
F56103	C-21	.01 mf	600 V	Tubular
F56403	C-22	.04 mf	600 V	Tubular
	C-23, C-24, C-30	Part of Chassis Case		
47X129	C25	200 mmf		Fixed mica
46X297	C-26, C-29	.50 mf	180 V	Tubular
R54552	C-27	.0055	1800 V	Tubular
47X114	C-28	210 mmf		Fixed mica

RESISTORS

		OHMS	WATTS	
B85474	R-1 R-11, R-12	470 K	0.5	Carbon
C85153	R-2	15 K	1.0	Carbon
B85224	R-3	220 K	0.5	Carbon
D84153	R-4	15 K	2.0	Carbon
B84223	R-5	22 K	0.5	Carbon
B85225	R-6	2.2 meg	0.5	Carbon
B84823	R-7	82 K	0.5	Carbon
B85473	R-8	47 K	0.5	Carbon
B85475	R-9	4.7 meg	0.5	Carbon
36X296	R-10	500 K	Volume	control and switch
C84561	R-13	560	1.0	Carbon
C85152	R-14	1500	1.0	Carbon
B84270	R-15	27	0.5	Carbon
B84820	R-16, R-17	82	0.5	Carbon

TUNING ASSEMBLY

26A388	Tuning Assembly complete with Coil Cans, Coils, Iron Cores, and Drive Assembly
42X140	Coil Cans
28X305	Clamp Springs to hold Coil Cans to Tuner Mounting Plate
28X184	Clamp Springs for mounting Antenna, Interstage, and Oscillator Coils
28X309	Slotted Brass Tension Spring
37X202	Bakelite Coupling for Tuning Control Shaft

CONTROL UNIT ASSEMBLY PARTS

	Quantity Used	
*20A92	1	Tuning Control Unit
*20A91	1	Volume Control Fitting
†	2	Control Knobs, Specify Name of Car, Year, and Model.
		Molded Type
		Chromium Type

* Shipped with each radio. † Shipped with each panel kit.

INSTALLATION ITEMS

CABLE AND FLEXIBLE SHAFT ASSEMBLIES

	Quantity Used	
18A53	2	27" Tuning Control and Volume Control Flexible Drive Shafts
18A54	2	20" Same as above
18A55	2	36" Same as above
13X390	1	Battery Cable (long section with Fuse Receptacle)
7A162	1	Dial Lamp Socket and Cable
13X357	1	"A" Cable (Short Section connected to Chassis)
13X424	1	Speaker Cable Assembly (on Chassis) complete with Socket
3A310	1	Socket for Speaker Cable

INSTRUMENT PANEL SPEAKER MOUNTING PARTS

26A276	1	Speaker Mounting Kit (For mounting speaker on Instrument Panel) complete with Speaker Baffle, Brackets, Clamps, Nuts, Bolts, and Washers
25X789	1	Strap Bracket only
25X787	1	Speaker Adjusting Bracket ("L" Shaped)
30X154	1	"U" Clamp
25X786	1	Bracket for "U" Clamp
25X785	1	9" Slotted Speaker Bar
14X256	1	Cardboard Speaker Baffle
8X108	1	Sponge Rubber Strip

FIRE WALL SPEAKER MOUNTING PARTS

26A274	1	Speaker Mounting Kit (for mounting speaker on Fire Wall) complete with Speaker Housing, Grille Cloth, Speaker Screen, Washers, and Nuts
14X271	1	Speaker Housing only
14X205	1	Grille Cloth
14X204	1	Speaker Screen

MISCELLANEOUS ITEMS

26A277	1	Radio Mounting Bolt Kit complete with "J" Bolts, Nuts, and Washers
20X339	2	"J" Bolts only
16X27	1	14 Ampere Fuse
21A6	1	Distributor Suppressor
48X27	1	Generator Condenser
	1	Dial Lamp (No. 51)
21A7		Spark Plug Suppressors (Not shipped with Radio)
21A5	1	Choke-Condenser Unit (Not shipped with Radio)

MODEL D4630C — WESTERN AUTO SUPPLY CO.

REPLACEMENT PARTS LIST

NOTICE: There is a model number label on the radio. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

12A474	6" PM Speaker
	Cone and Voice Coil Assembly (Specify part number and letters stamped on speaker)
3A303	Tube Socket—Octal (8 prong)
3A316	Vibrator Socket (4 prong) moulded
19A37	Vibrator
28X52	Spring Clamp for Vibrator
32X134	Shield for Filter Assembly
32X105	Shield for Power Transformer
34X300	Top Cover for Chassis Case less Name Plate
34X301	Bottom Cover for Chassis Case
28X48	Spring Clips to Ground Covers to Case

TRANSFORMERS AND COILS

9A1115	L-1	R-F Plate Reactor
9A1369	L-2	Field and Pilot Light Filter Reactor
9A1194	L-3	"A" Line Reactor
9A911	L-4	Vibrator "A" Line Reactor
	T-1, T-2, T-3	Antenna, Interstage, Oscillator Coils and Iron Cores are a part of the Tuning Assembly. Entire assembly must be ordered. See Tuning Assembly
9A1907	T-4	1st I-F Transformer and Can Assembly
9A1908	T-5	2nd I-F Transformer and Can Assembly
51X89	T-6	Output Transformer
53X232	T-7	Power Transformer

CAPACITORS

		CAPACITY	VOLTAGE	
17A159	C-1A, C-1B, C-1C	2.8-35 mmf, 10-90 mmf, 2.8-25 mmf	Antenna, Interstage, Oscillator	Trimmer
47X479	C-2	300 mmf		Silvered mica
47X476	C-3, C-18	100 mmf		Moulded
D56102	C-4	.001 mf	400 V	Tubular
46X317	C-5	.001 mf	200 V	Polystyrene
47X167	C-7	100 mmf		Ceramic
47X463	C-8	47 mmf		Moulded
D56104	C-9	.10 mf	400 V	Tubular
	C-10, C-11	Part of T-4 (1st I-F Transformer Assembly)		
D56203	C-12	.02 mf	400 V	Tubular
B56503	C-13	.05 mf	200 V	Tubular
	C-14, C-15	Part of T-5 (2nd I-F Transformer Assembly)		
47X112	C-16A, C-16B	50 mmf, 50 mmf		Dual mica
B56103	C-17	.01 mf	200 V	Tubular
D56103	C-19	.01 mf	400 V	Tubular
45X296	C-20A, C-20B, C-20C	20 mf, 25 mf, 25 mf	25 V, 350 V, 350 V	Dry Electrolytic Capacitor
F56103	C-21	.01 mf	600 V	Tubular
F56403	C-22	.04 mf	600 V	Tubular
	C-23, C-24, C-30	Part of Chassis Case		
47X129	C25	200 mmf		Fixed mica
46X297	C-26, C-29	.50 mf	180 V	Tubular
R54552	C-27	.0055 mf	1800 V	Tubular
47X114	C-28	210 mmf		Fixed mica

RESISTORS

		OHMS	WATTS	
B85474	R-1, R-11, R-12	470 K	0.5	Carbon
C85153	R-2	15 K	1.0	Carbon
B85224	R-3	220 K	0.5	Carbon
D84153	R-4	15 K	2.0	Carbon
B84223	R-5	22 K	0.5	Carbon
B85225	R-6	2.2 meg	0.5	Carbon
B84823	R-7	82 K	0.5	Carbon
B85473	R-8	47 K	0.5	Carbon
B85475	R-9	4.7 meg	0.5	Carbon
36X296	R-10	500 K	Volume control and switch	
C84561	R-13	560	1.0	Carbon
C85152	R-14	1500	1.0	Carbon
B84270	R-15	27	0.5	Carbon
B84820	R-16, R-17	82	0.5	Carbon

TUNING ASSEMBLY

26A388	Tuning Assembly complete with Coil Cans, Coils, Iron Cores, and Drive Assembly
42X140	Coil Cans
28X305	Clamp Springs to hold Coil Cans to Tuner Mounting Plate
28X184	Clamp Springs for mounting Antenna, Interstage, and Oscillator Coils
28X309	Slotted Brass Tension Spring
37X202	Bakelite Coupling for Tuning Control Shaft

CONTROL UNIT ASSEMBLY PARTS

	Quantity Used	
*20A92	1	Tuning Control Unit
*20A91	1	Volume Control Fitting
†	2	Control Knobs, Specify Name of Car, Year, and Model.
		Molded Type
		Chromium Type

* Shipped with each radio. † Shipped with each panel kit.

INSTALLATION ITEMS

CABLE AND FLEXIBLE SHAFT ASSEMBLIES

	Quantity Used	
18A53	2	27" Tuning Control and Volume Control Flexible Drive Shafts
18A54	2	20" Same as above
18A55	2	36" Same as above
13X390	1	Battery Cable (long section with Fuse Receptacle)
7A162	1	Dial Lamp Socket and Cable Assembly
13X336	1	"A" Cable (Short Section connected to Chassis)
13X582	1	Speaker Cable Assembly (an chassis)

INSTRUMENT PANEL SPEAKER MOUNTING PARTS

26A276	1	Speaker Mounting Kit (For mounting speaker on Instrument Panel) complete with Speaker Baffle, Brackets, Clamps, Nuts, Bolts, and Washers
25X789	1	Strap Bracket only
25X787	1	Speaker Adjusting Bracket ("L" Shaped)
30X154	1	"U" Clamp
25X786	1	Bracket for "U" Clamp
25X785	1	9" Slotted Speaker Bar
14X256	1	Cardboard Speaker Baffle
8X108	1	Sponge Rubber Strip

FIRE WALL SPEAKER MOUNTING PARTS

26A380	1	Speaker Mounting Kit (for mounting speaker on Fire Wall) complete with Speaker Housing, Grille Cloth, Speaker Screen, Washers, and Nuts
14X321	1	Speaker Housing only
14X322	1	Grille Cloth
14X320	1	Speaker Screen

MISCELLANEOUS ITEMS

26A277	1	Radio Mounting Bolt Kit complete with "J" Bolts, Nuts, and Washers
20X339	2	"J" Bolts only
16X27	1	14 Ampere Fuse
21A6	1	Distributor Suppressor
48X27	1	Generator Condenser
	1	Dial Lamp (No. 51)
21A7		Spark Plug Suppressors (Not shipped with Radio)
21A5	1	Choke-Condenser Unit (Not shipped with Radio)

WESTERN AUTO SUPPLY CO. MODEL D4630D

REPLACEMENT PARTS LIST

NOTICE: There is a model number label on the radio. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

12A474	6" PM Speaker
3A303	Tube Socket—Octal (8 prong)
3A316	Vibrator Socket (4 prong) moulded
19A41	Vibrator
28X52	Spring Clamp for Vibrator
32X134	Shield for Filter Assembly
32X105	Shield for Power Transformer
34X300	Top Cover for Chassis Case less Name Plate
34X301	Bottom Cover for Chassis Case
28X48	Spring Clips to Ground Covers to Case

TRANSFORMERS AND COILS

9A1194	L-3	"A" Line Reactor
9A911	L-4	Vibrator "A" Line Reactor
	T-1, T-2, T-3	Antenna, Interstage, Oscillator Coils and Iron Cores are a part of the Tuning Assembly. Entire assembly must be ordered. See Tuning Assembly
9A1907	T-4	1st I-F Transformer and Can Assembly
9A1908	T-5	2nd I-F Transformer and Can Assembly
51X89	T-6	Output Transformer
53X292	T-7	Power Transformer

CAPACITORS

		CAPACITY	VOLTAGE	
17A159	C-1A	2.8-35 mmf	Antenna	Trimmer
	C-1B	10-90 mmf	Interstage	
	C-1C	2.8-25 mmf	Oscillator	
47X479	C-2	300 mmf		Silvered mica
47X476	C-3, C-18	100 mmf		Moulded
D56102	C-4	.001 mf	400 V	Tubular
46X317	C-5	.001 mf	200 V	Polystyrene
47X167	C-7	100 mmf		Ceramic
47X463	C-8	47 mmf		Moulded
D56104	C-9	.10 mf	400 V	Tubular
	C-10, C-11	Part of T-4 (1st I-F Transformer Assembly)		
D56203	C-12	.02 mf	400 V	Tubular
B56503	C-13	.05 mf	200 V	Tubular
	C-14, C-15	Part of T-5 (2nd I-F Transformer Assembly)		
47X112	C-16A	50 mmf		Dual mica
	C-16B	50 mmf		
B56103	C-17	.01 mf	200 V	Tubular
D56103	C-19	.01 mf	400 V	Tubular
45X364	C-20A	20 mf	25 V	Dry Electrolytic Capacitor
	C-20B	10 mf	350 V	
	C-20C	20 mf	350 V	
F56103	C-21	.01 mf	600 V	Tubular
F56403	C-22	.04 mf	600 V	Tubular
47X114	C-25	210 mmf		Fixed mica
46X297	C-26, C-29	.50 mf	120 V	Tubular
P54402	C-27	.004 mf	1600 V	Tubular
47X129	C-28	200 mmf		Fixed mica
	C-30	Part of Chassis Case		

RESISTORS

		OHMS	WATTS	
B85474	R-1, R-11, R-12	470 K	0.5	Carbon
C85153	R-2	15 K	1.0	Carbon
B85224	R-3	220 K	0.5	Carbon
D84153	R-4	15 K	2.0	Carbon
B84223	R-5	22 K	0.5	Carbon
B85225	R-6	2.2 meg	0.5	Carbon
B84823	R-7	82 K	0.5	Carbon
B85473	R-8	47 K	0.5	Carbon
B85475	R-9	4.7 meg	0.5	Carbon
36X296	R-10	500 K	Volume control and switch	
C84561	R-13	560	1.0	Carbon
D85152	R-14	1500	2.0	Carbon
B84820	R-16, R-17	82	0.5	Carbon

TUNING ASSEMBLY

20A99	Iron Core Tuning Assembly complete with Coil Cans, Coils, Iron Cores, and Drive Assembly
42X140	Coil Cans
28X305	Clamp Springs to hold Coil Cans to Tuner Mounting Plate
28X184	Clamp Springs for mounting Antenna, Interstage, and Oscillator Coils
28X309	Slotted Brass Tension Spring
37X202	Bakelite Coupling for Tuning Control Shaft

CONTROL UNIT ASSEMBLY PARTS

	Quantity Used	
*20A92	1	Tuning Control Unit
*20A91	1	Volume Control Fittings
†	2	Control Knobs, Specify Name of Car, Year, and Model. Molded Type. Chromium Type.

* Shipped with each radio. † Shipped with each panel kit.

INSTALLATION ITEMS

CABLE AND FLEXIBLE SHAFT ASSEMBLIES

	Quantity Used	
18A53	2	27" Tuning Control and Volume Control Flexible Drive Shafts
18A54	2	20" Same as above
18A55	2	36" Same as above
13X390	1	Battery Cable (long section with Fuse Receptacle)
7A162	1	Dial Lamp Socket and Cable Assembly
13X336	1	"A" Cable (Short Section connected to Chassis)
13X582	1	Speaker Cable Assembly (on chassis)

INSTRUMENT PANEL SPEAKER MOUNTING PARTS

26A276	1	Speaker Mounting Kit (For mounting speaker on Instrument Panel) complete with Speaker Baffle, Brackets, Clamps, Nuts, Bolts, and Washers
25X789	1	Strap Bracket only
25X787	1	Speaker Adjusting Bracket ("L" Shaped)
30X154	1	"U" Clamp
25X786	1	Bracket for "U" Clamp
25X785	1	9" Slotted Speaker Bar
14X256	1	Cardboard Speaker Baffle
8X108	1	Sponge Rubber Strip

FIRE WALL SPEAKER MOUNTING PARTS

26A380	1	Speaker Mounting Kit (for mounting speaker on Fire Wall) complete with Speaker Housing, Grille Cloth, Speaker Screen, Washers, and Nuts
14X321	1	Speaker Housing only
14X322	1	Grille Cloth
14X320	1	Speaker Screen

MISCELLANEOUS ITEMS

26A277	1	Radio Mounting Bolt Kit complete with "J" Bolts, Nuts, and Washers
20X339	2	"J" Bolts only
16X27	1	14 Ampere Fuse
21A6	1	Distributor Suppressor
48X27	1	Generator Condenser
7A32	1	No. 51 Pilot Light Bulb
21A7		Spark Plug Suppressors (Not shipped with Radio)
21A5	1	Choke-Condenser Unit (Not shipped with Radio)

MODEL D4630E WESTERN AUTO SUPPLY CO.

REPLACEMENT PARTS LIST

NOTICE: There is a model number label on the radio. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

12A474	6" PM Speaker	
3A303	Tube Socket—Octal (8 prong)	
3A316	Vibrator Socket (4 prong) moulded	
19A41	Vibrator	
28X52	Spring Clamp for Vibrator	
32X134	Shield for Filter Assembly	
32X105	Shield for Power Transformer	
34X300	Top Cover for Chassis Case less Name Plate	
34X301	Bottom Cover for Chassis Case	
28X48	Spring Clips to Ground Covers to Case	

TRANSFORMERS AND COILS

9A1369	L-2	Pilot light Filter Reactor
9A1194	L-3	"A" Line Reactor
9A911	L-4	Vibrator "A" Line Reactor
	T-1, T-2, T-3	Antenna, Interstage, Oscillator Coils and Iron Cores are a part of the Tuning Assembly. Entire assembly must be ordered. See Tuning Assembly
9A1907	T-4	1st I-F Transformer and Can Assembly
9A1908	T-5	2nd I-F Transformer and Can Assembly
51X89	T-6	Output Transformer
53X292	T-7	Power Transformer

CAPACITORS

		CAPACITY	VOLTAGE	
17A159	C-1A	2.8-35 mmf	Antenna	Trimmer
	C-1B	10-90 mmf	Interstage	
	C-1C	2.8-25 mmf	Oscillator	
47X479	C-2	300 mmf		Silvered mica
47X476	C-3, C-18	100 mmf		Moulded
D56102	C-4	.001 mf	400 V	Tubular
46X317	C-5	.001 mf	200 V	Polystyrene
47X167	C-7	100 mmf		Ceramic
47X463	C-8	47 mmf		Moulded
D56104	C-9	.10 mf	400 V	Tubular
	C-10, C-11	Part of T-4 (1st I-F Transformer Assembly)		
D56203	C-12	.02 mf	400 V	Tubular
B56503	C-13	.05 mf	200 V	Tubular
	C-14, C-15	Part of T-5 (2nd I-F Transformer Assembly)		
47X112	C-16A	50 mmf		Dual mica
	C-16B	50 mmf		
B56103	C-17	.01 mf	200 V	Tubular
D56103	C-19	.01 mf	400 V	Tubular
45X364	C-20A	20 mf	25 V	Dry Electrolytic Capacitor
	C-20B	10 mf	350 V	
	C-20C	20 mf	350 V	
F56103	C-21	.01 mf	600 V	Tubular
F56403	C-22	.04 mf	600 V	Tubular
47X114	C-25	210 mmf		Fixed mica
46X297	C-26, C-29	.50 mf	120 V	Tubular
P54402	C-27	.004 mf	1600 V	Tubular
47X129	C-28	200 mmf		Fixed mica
	C-23, C-24, C-30	Part of Chassis Case		

RESISTORS

		OHMS	WATTS	
B85474	R-1, R-11, R-12	470 K	0.5	Carbon
C85153	R-2	15 K	1.0	Carbon
B85224	R-3	220 K	0.5	Carbon
D84153	R-4	15 K	2.0	Carbon
B84223	R-5	22 K	0.5	Carbon
B85225	R-6	2.2 meg	0.5	Carbon
B84823	R-7	82 K	0.5	Carbon
B85473	R-8	47 K	0.5	Carbon
B85475	R-9	4.7 meg	0.5	Carbon
36X296	R-10	500 K	Volume	control and switch
C84561	R-13	560	1.0	Carbon
D85152	R-14	1500	2.0	Carbon
B84820	R-16, R-17	82	0.5	Carbon

TUNING ASSEMBLY

20A99	Iron Core Tuning Assembly complete with Coil Cans, Coils, Iron Cores, and Drive Assembly
42X140	Coil Cans
28X305	Clamp Springs to hold Coil Cans to Tuner Mounting Plate
28X184	Clamp Springs for mounting Antenna, Interstage, and Oscillator Coils
28X309	Slotted Brass Tension Spring
37X202	Bakelite Coupling for Tuning Control Shaft

CONTROL UNIT ASSEMBLY PARTS

	Quantity Used	
*20A92	1	Tuning Control Unit
*20A91	1	Volume Control Fittings
†	2	Control Knobs, Specify Name of Car, Year, and Model. Molded Type. Chromium Type.

* Shipped with each radio. † Shipped with each panel kit.

INSTALLATION ITEMS

CABLE AND FLEXIBLE SHAFT ASSEMBLIES

	Quantity Used	
18A53	2	27" Tuning Control and Volume Control Flexible Drive Shafts
18A54	2	20" Same as above
18A55	2	36" Same as above
13X390	1	Battery Cable (long section with Fuse Receptacle)
7A162	1	Dial Lamp Socket and Cable Assembly
13X336	1	"A" Cable (Short Section connected to Chassis)
13X582	1	Speaker Cable Assembly (on chassis)

INSTRUMENT PANEL SPEAKER MOUNTING PARTS

26A276	1	Speaker Mounting Kit (For mounting speaker on Instrument Panel) complete with Speaker Baffle, Brackets, Clamps, Nuts, Bolts, and Washers
25X789	1	Strap Bracket only
25X787	1	Speaker Adjusting Bracket ("L" Shaped)
30X154	1	"U" Clamp
25X786	1	Bracket for "U" Clamp
25X785	1	9" Slotted Speaker Bar
14X25C	1	Cardboard Speaker Baffle
8X108	1	Sponge Rubber Strip

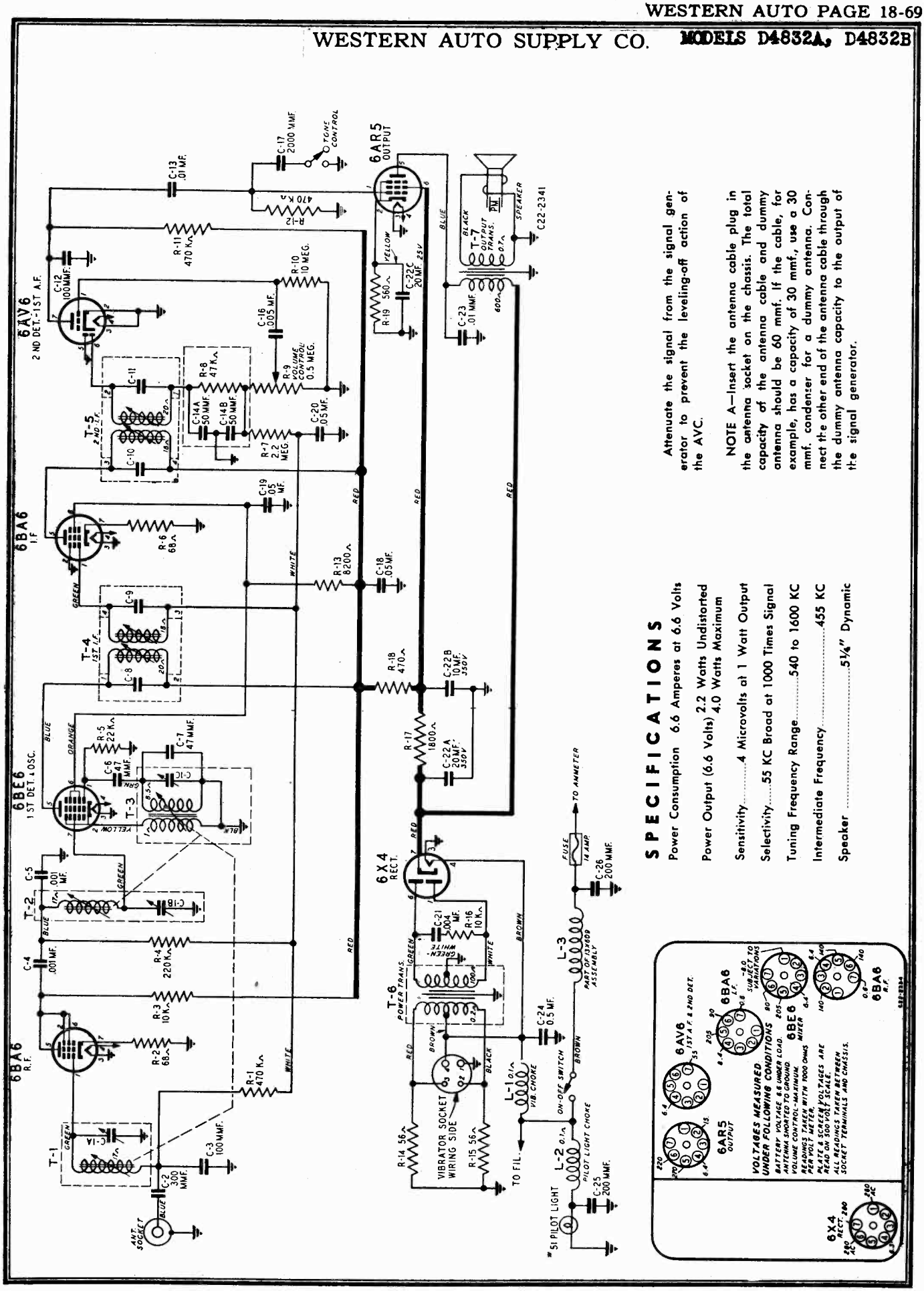
FIRE WALL SPEAKER MOUNTING PARTS

26A380	1	Speaker Mounting Kit (for mounting speaker on Fire Wall) complete with Speaker Housing, Grille Cloth, Speaker Screen, Washers, and Nuts
14X321	1	Speaker Housing only
14X322	1	Grille Cloth
14X320	1	Speaker Screen

MISCELLANEOUS ITEMS

26A277	1	Radio Mounting Bolt Kit complete with "J" Bolts, Nuts, and Washers
20X339	2	"J" Bolts only
16X27	1	14 Ampere Fuse
21A6	1	Distributor Suppressor
48X27	1	Generator Condenser
7A32	1	No. 51 Pilot Light Bulb
21A7		Spark Plug Suppressors (Not shipped with Radio)
21A5	1	Choke-Condenser Unit (Not shipped with Radio)

WESTERN AUTO SUPPLY CO. MODELS D4832A, D4832B



SPECIFICATIONS

Power Consumption 6.6 Amperes at 6.6 Volts

Power Output (6.6 Volts) 2.2 Watts Undistorted
4.0 Watts Maximum

Sensitivity.....4 Microvolts at 1 Watt Output

Selectivity.....55 KC Broad at 1000 Times Signal

Tuning Frequency Range.....540 to 1600 KC

Intermediate Frequency.....455 KC

Speaker .....5¼" Dynamic

Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

NOTE A—Insert the antenna cable plug in the antenna socket on the chassis. The total capacity of the antenna cable and dummy antenna should be 60 mmf. If the cable, for example, has a capacity of 30 mmf., use a 30 mmf. condenser for a dummy antenna. Connect the other end of the antenna cable through the dummy antenna capacity to the output of the signal generator.

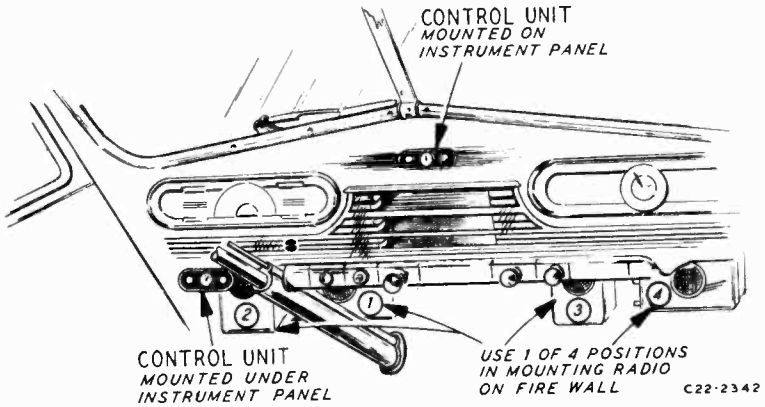


Fig. 1—Control Unit and Chassis Mountings

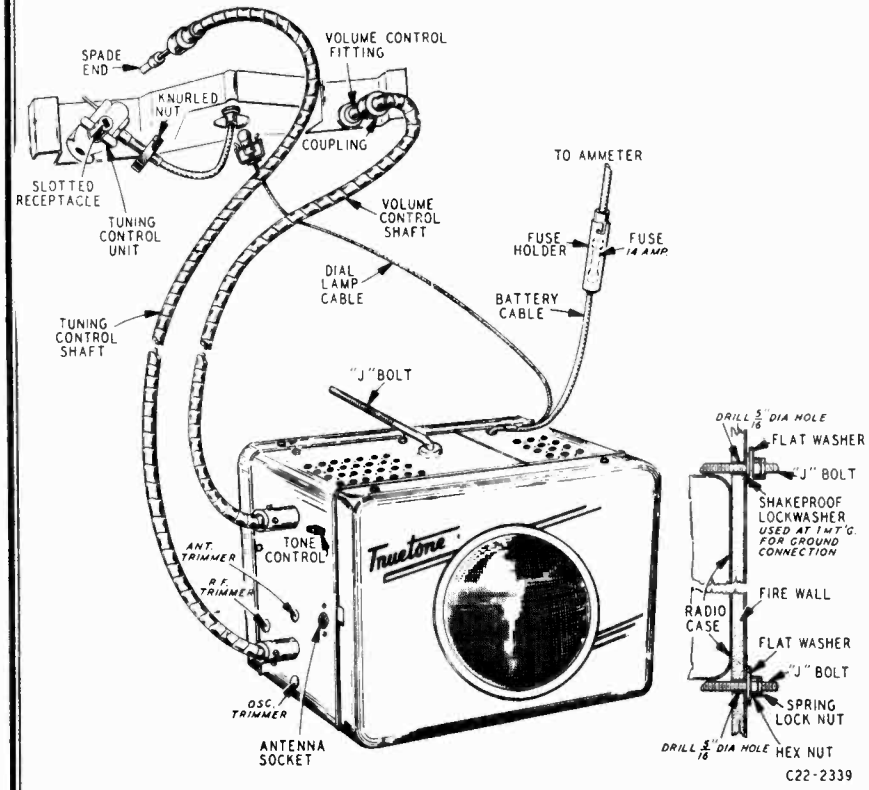


Fig. 2—General Installation View

ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.
Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.
Allow Chassis and Signal Generator to "Heat Up" for several minutes.
The following equipment is required for aligning:

A Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.
Output Indicating Meter—Non-Metallic Screwdriver.
Dummy Antenna—.05 mf., See Note A.

SIGNAL GENERATOR FREQUENCY SETTING	SIGNAL GENERATOR CONNECTION AT RADIO	DUMMY ANTENNA	IRON CORE SETTING	ADJUST TUNING SLUGS (IF) AND TRIMMERS TO MAXIMUM (See Fig. 3)
I.F.	Control Grid (prong No. 7)		Extreme Position	1st I.F. PRI. & SEC. ADJ
455 KC	6BE6 Mixer Tube	.05 mf.	out of Coil	2nd I.F. PRI. & SEC. ADJ
OSCILLATOR				
1600 KC	Antenna Coble See Note A	See Note A	Extreme Position out of Coil	Oscillator (CIC)
1400 KC ADJUSTMENT				
1400 KC	Antenna Cable	See Note A	Tune to Max. Output with Tuning Knob	R.F. (C1B) Ant. (C1A)

Reassemble Radio—Install in Car—Connect Car Antenna to Radio.

Car Antenna Readjustment—Tune in weak signal near 1400 KC—Readjust Antenna Trimmer C1A for maximum output.

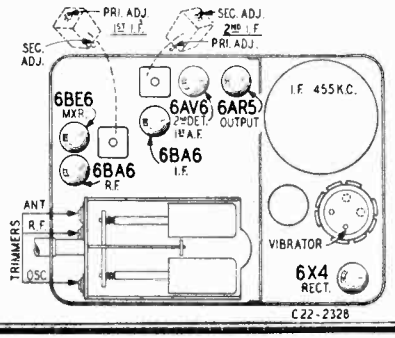


Fig. 3—Location of Tubes and Vibrator

Calibrating the Radio

To calibrate the radio, tune in a station of known frequency, loosen the knurled nut at the tuning control clamp fitting and turn the flexible shaft with the fingers until the dial pointer indicates the frequency of the station being received.

Slide the flexible shaft in or out of the tuning control clamp fitting until a smooth action with a minimum of backlash is obtained.

The knurled nut should then be tightened with the fingers.

SUPPRESSION OF MOTOR NOISE

The following procedure has been found to be effective in reducing motor noise to a satisfactory level in most cars. Follow the steps in the order given. Additional procedure, which may be required in exceptional cases of motor noise, is not covered here and will be found by referring to current literature on this subject.

GENERATOR CONDENSER — A generator condenser is required in all cases. Connect the condenser lead to the battery terminal of the generator. The case and mounting strap connect the other side of the condenser to ground. This unit must, therefore, be well grounded at its mounting.

CAUTION—In cars with automatic regulators, it is important not to connect the condenser across the field terminal. Most manufacturers at the present time have a recommendation for the proper post at which to connect the condenser.

DISTRIBUTOR SUPPRESSOR—A distributor suppressor will be required in most cases. Remove the high tension lead to the distributor. Insert a distributor suppressor and connect the wire to the other end of the suppressor (See Fig. 4). If this is not practical, cut the high tension lead close to the distributor and use a wood screw end type distributor suppressor in this line.

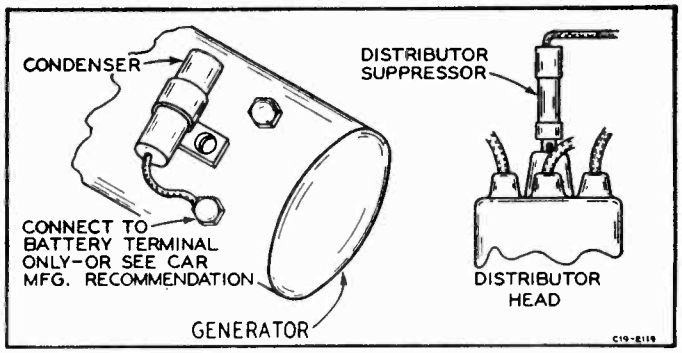


Fig. 4—Generator Condenser and Distributor Suppressor

Withdraw Antenna Cable Plug

Turn on the radio and start the motor.

If motor noise is heard, proceed as follows:

BONDING CABLES, STEERING COLUMN, ETC.—Try grounding to the fire wall all cables and tubing which pass through it such as oil lines, gas lines, etc. It is also possible for the steering column, foot pedals, and brake lever to carry interference to the back of the fire wall at which point it may effect the radio. By means of a file, contact can be established between any of these parts and the fire wall or frame in order to determine whether such a ground will reduce the noise. To bond the parts to the fire wall or frame, clean the point of contact, wrap a length of one inch braided shielding around the part, and solder the connection. Then solder the end of the shielding to the fire wall or frame or ground it under a screw head if one is convenient.

Sufficient play should be left in the bonding shielding so that movement of the parts will not loosen this shielding.

Then Re-insert Antenna Cable Plug

If motor noise is heard when the antenna cable is reconnected, proceed as follows until the noise is satisfactorily reduced:

BYPASS CONDENSERS — Try a .5 mfd. bypass condenser from the ammeter to ground and see if interference is reduced, Install this condenser permanently if there is an improvement.

In like manner, try a .5 mfd. condenser from car fuse to ground, switch to ground, tail light and stop light connections to ground, windshield wiper and various other 6 volt connections to ground, noting what effect these condensers have on the noise pickup.

Try a .5 mfd. condenser between the point at which the dome light lead leaves the pillar post and ground.

Try a .5 mfd. condenser from the "Hot" side of the coil primary to ground.

The electric gauges used for oil, water, and gas are often a source of interference and bypass condensers should be tried. The condenser should usually be connected to the end of the line nearest the measuring device rather than at the instrument panel.

HIGH AND LOW TENSION LEADS—In some cases, the high and low tension leads between the coil and distributor are run close together. In some cars, they are in the same conduit. If this is the case, remove the low tension lead from this conduit. In any event, keep the high and low tension leads as far apart from each other as possible. If separating the two leads is not sufficient, shield and ground the shield of the low tension lead.

GROUNDING MOTOR AND OTHER PARTS—The motor must, in every case, be well grounded to the frame of the car. If it is not, use a very heavy braided lead for this purpose, similar to a storage battery ground lead. In like manner, it may be necessary to check the grounding of the metal fire wall, instrument panel, transmission, radiator, hood, and muffler to the frame of the automobile. To obtain a good electrical connection, scrape off the paint, if necessary, at the point where ground contact is made.

PEENING ROTOR ARM — In extreme cases of motor noise, it is advisable to peen the distributor rotor arm, that is, increase the length of the arm by using a small machinist's hammer. This will lessen the gap between the rotor arm and the stationary contacts thus reducing the spark. Be sure, after peening the arm, that it does not strike the stationary contacts.

SPARK PLUG SUPPRESSORS—If motor noise persists, spark plug suppressors must be installed. One suppressor is put on each plug. These are not regularly supplied with the radio and must be purchased extra. Ninety-five percent of all cars will not require spark plug suppressors.

Care should be taken that a good mechanical and electrical connection is made between the spark plugs, suppressors, and plug wires.

WHEEL OR BRAKE STATIC—To determine if noise is being caused from this source, set the car in motion; then with the motor shut off and the clutch disengaged, apply the brakes. *If the noise* stops, the source of the static is in the wheels. The use of a front or rear wheel static eliminator will generally end the trouble.

MODELS D4832A, D4832B WESTERN AUTO SUPPLY CO.

REPLACEMENT PARTS LIST

NOTICE: There is a model number label on the radio. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

12A485	5¼" P.M. Speaker
3A441	Tube Socket — Miniature
2A175	Tone Control Switch
3A316	Vibrator Socket (4 prong) molded
19A41	Vibrator
28X52	Vibrator Spring Clamp
32X105	Shield for Power Transformer
34X537	Top Cover for Chassis Case
34X538	Bottom Cover for Chassis Case
28X48	Spring Clips to Ground Covers to Case
20A100	Iron Core Tuning Assembly, Complete with Coils, Trimmers, Etc.
76X1	Resistor Capacitor Combination

TRANSFORMERS AND COILS

L-1, L-2	9A1958	Choke
L-3	13X609	Twisted Lead & Coil Assembly
T-1, T-2, T-3		Antenna, R-F, Oscillator Coils and Iron Cores are o part of the 20A100 Tuning Assembly. Ent.re Assembly must be ordered. (See Miscellaneous.)
T-4	9A1961	1st I.F. Transformer and Can Assembly
T-5	9A1959	2nd I.F. Transformer and Can Assembly
T-6	53X294	Power Transformer
T-7	51X137	Output Transformer

CAPACITORS

C-1A, C-1B, C-1C		Part of Iron Core Tuning Assembly (See Miscellaneous)		
C-2	47X479	300 mmf		Mica
C-3, C-12	47X497	100 mmf		Ceramic
C-4, C-5	46X399	.001 mf	400 V	Tubular
C-6	47X495	47 mmf		Ceramic
C-7	47X517	47 mmf		Ceramic
C-8, C-9		Part of T-4 (1st I. F. Transformer)		
C-10, C-11		Part of T-5 (2nd I. F. Transformer)		
C-13	46X402	.01 mf	1000 V	Tubular
C-14A, C-14B		Part of 76X1 Resistor-Capacitor Combination (See Miscellaneous)		
C-16	46X400	.005 mf	200 V	Tubular
C-17	47X520	2000 mmf		Ceramic
C-18, C-19	46X397	.05 mf	400 V	Tubular
C-20	46X398	.05 mf	200 V	Tubular
C-21	P54402	.004 mf	1600 V	Tubular
C-22A		20 mf	350 V	
C-22B	45X365	10 mf	350 V	Dry Electrolytic
C-22C		20 mf	25 V	
C-23	46X401	.01 mf	400 V	Tubular
C-24	46X395	.5 mf	100 V	Tubular
C-25, C-26	47X129	200 mmf		Mica

RESISTORS

		Ohms	Watts	
R-1, R-11, R-12	B85474	470 K	0.5	Carbon
R-2, R-6	B85680	68	0.5	Carbon
R-3	C85103	10 K	1.0	Carbon
R-4	B85224	220 K	0.5	Corbon
R-5	B85223	22 K	0.5	Carbon
R-7	B85225	2.2 meg.	0.5	Carbon
R-8		47 K Capacitor Combination (See Miscellaneous)	Part of 76X1 Resistor	
R-9	36X296	.5 meg	Volume Control & Switch	
R-10	B85106	10 meg.	0.5	Carbon
R-13	C84822	8200	1.0	Carbon
R-14, R-15	C85560	56	1.0	Carbon
R-16	B85103	10 K	0.5	Carbon
R-17	D84182	1800	2.0	Carbon
R-18	B85471	470	0.5	Carbon
R-19	C84561	560	1.0	Carbon

CONTROL UNIT ASSEMBLY PARTS

	Quantity Used	
*20A92	1	Tuning Control Unit
*20A91	1	Volume Control Fittings
†	2	Control Knobs, Specify Name of Car, Year, and Model. Molded Type. Chromium Type.

* Shipped with each radio. † Shipped with each panel kit.

INSTALLATION ITEMS

CABLE AND FLEXIBLE SHAFT ASSEMBLIES

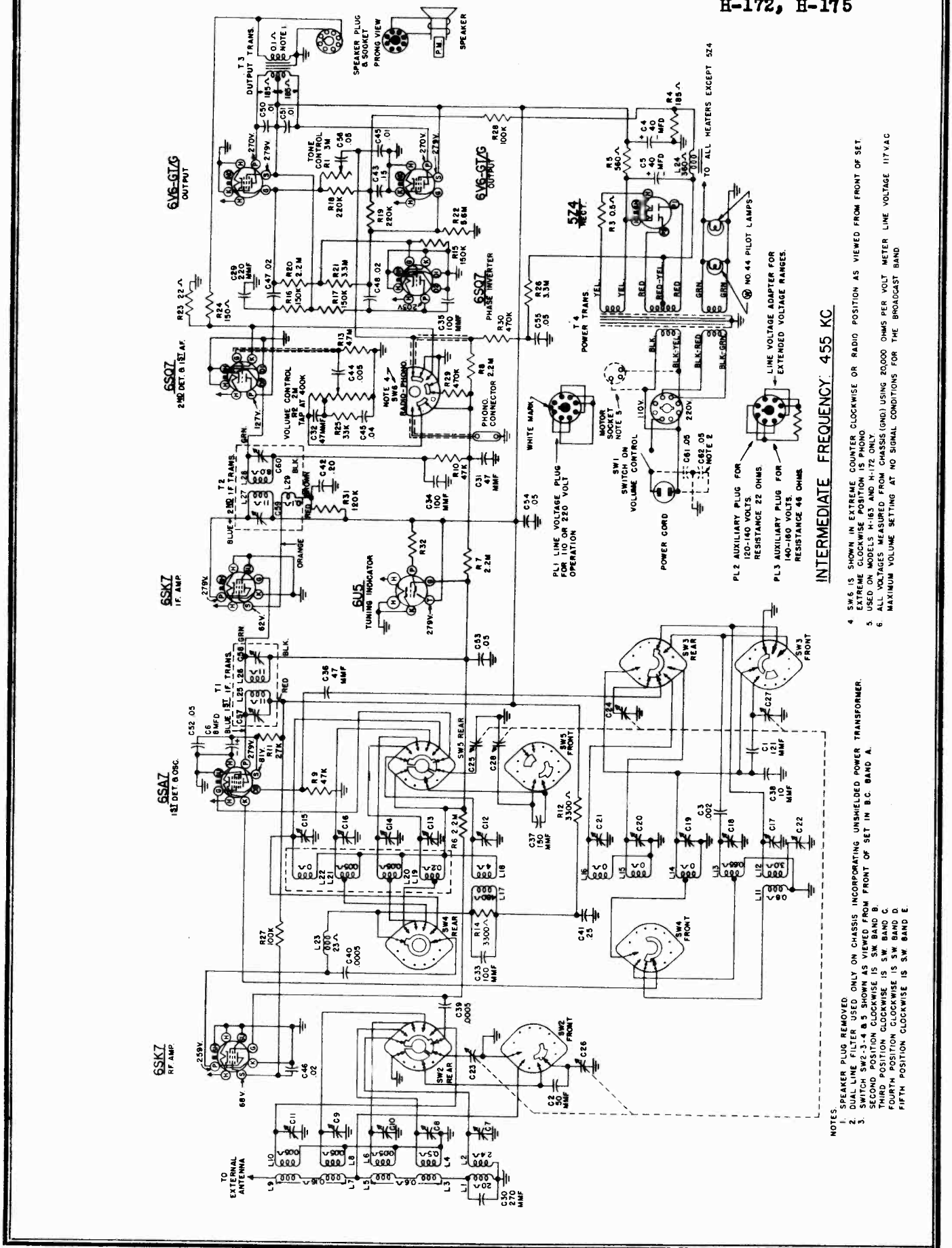
	Quantity Used	
18A53	2	27" Tuning Control and Volume Control Flexible Drive Shafts
18A54	2	20" Same as above
18A55	2	36" Same as above
13X390	1	Battery Cable (long section with Fuse Receptacle)
7A162	1	Dial Lamp Socket and Cable Assembly
13X336	1	"A" Cable (Short Section connected to Chassis)
13X601	1	Speaker Cable Assembly (on chassis)

MISCELLANEOUS ITEMS

26A490	1	Radio Mounting Bolt Kit complete with "J" Bolts, Nuts, and Washers
20X339	2	"J" Bolts only
16X27	1	14 Ampere Fuse
21A6	1	Distributor Suppressor
48X27	1	Generator Condenser
7A32	1	No. 51 Pilot Light Bulb
21A7		Spark Plug Suppressors (Not shipped with Radio)
21A5	1	Choke-Condenser Unit (Not shipped with Radio)

WESTINGHOUSE ELECTRIC CORP.

MODELS H-142, H-163, H-172, H-175



NOTES.
1. SPEAKER PLUG REMOVED.
2. DUAL LINE FILTER USED ONLY ON CHASSIS INCORPORATING UNSHIELDED POWER TRANSFORMER.
3. SWITCH SW2-3-4 & 5 SHOWN AS VIEWED FROM FRONT OF SET IN B.C. BAND A.
   SECOND POSITION CLOCKWISE IS SW BAND B.
   THIRD POSITION CLOCKWISE IS SW BAND C.
   FOURTH POSITION CLOCKWISE IS SW BAND D.
   FIFTH POSITION CLOCKWISE IS SW BAND E.
4. SW6 IS SHOWN IN EXTREME COUNTER CLOCKWISE OR RADIO POSITION AS VIEWED FROM FRONT OF SET. EXTREME CLOCKWISE POSITION IS PHONO.
5. USED ON MODELS H-163 AND H-172 ONLY.
6. ALL VOLTAGES MEASURED FROM CHASSIS (GND.) USING 20,000 OHMS PER VOLT METER LINE VOLTAGE 117 VAC MAXIMUM VOLUME SETTING AT NO SIGNAL CONDITIONS FOR THE BROADCAST BAND

MODELS **H-142, H-163, H-172, H-175** WESTINGHOUSE ELECTRIC CORP.

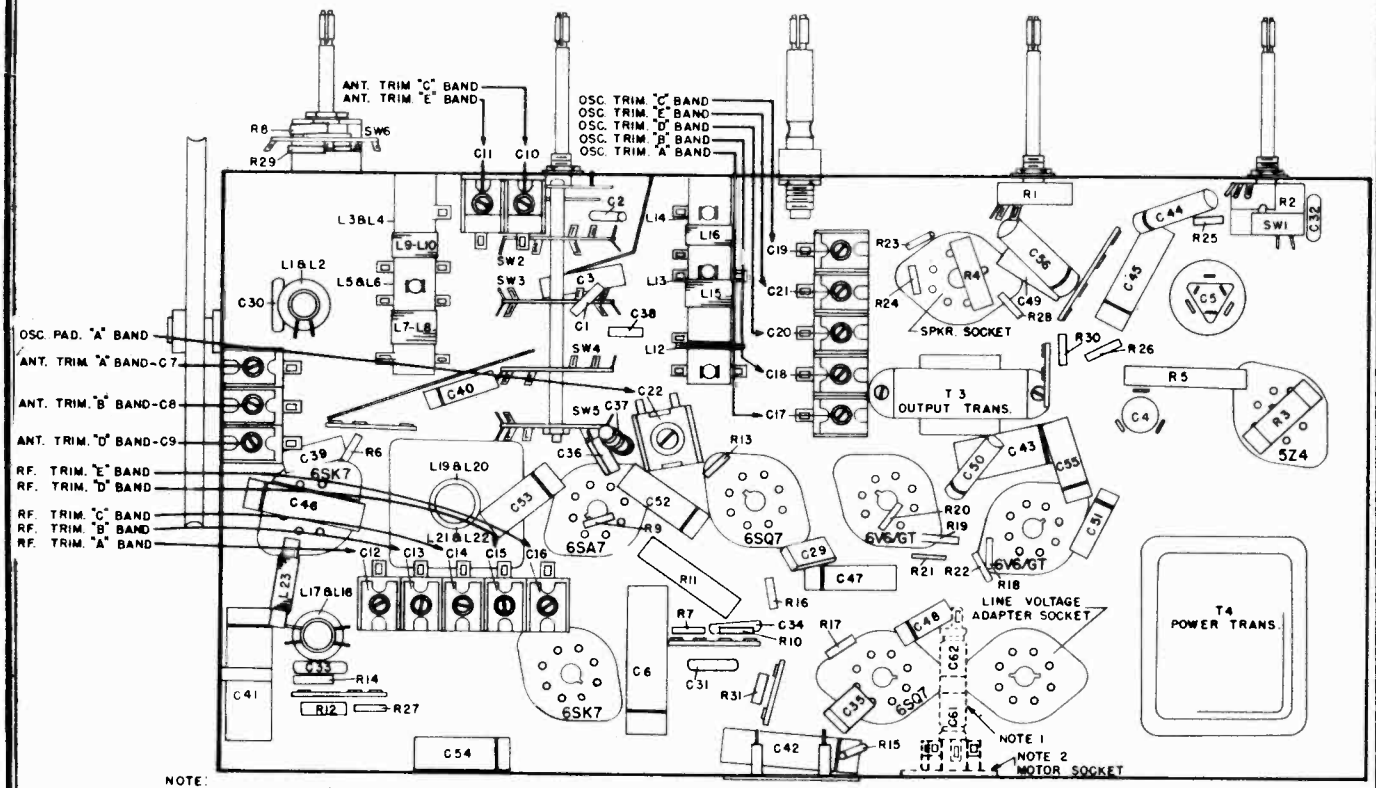
MODEL H-172

MODEL H-142

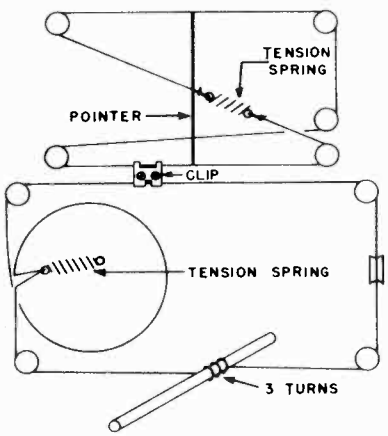
Step	Band Switch Position	Connect Signal Generator to—	Signal Generator Frequency	Radio Setting	Adjust
1	A	6SK7, 1st I-F control grid through 0.1 mfd. capacitor	455 kc	550 kc 166°	Secondary and primary trimmers of 2nd I-F trans. (T2) for maximum output.
2	A	6SA7, converter, control grid through a 0.1 mfd. capacitor	455 kc	550 kc 166°	Secondary and primary trimmers of 1st I-F trans. (T1) for maximum output.
3	A	6SA7, converter, control grid through a 0.1 mfd. capacitor	455 kc	550 kc 166°	Carefully "peak" all I-F transformer trimmers for maximum output.
4	A	Antenna lead through a 200 mmf. capacitor	1615 kc	minimum capacity 0°	"A" band oscillator trimmer (C17) for maximum output.
5	A	Antenna lead through a 200 mmf. capacitor	600 kc	600 kc 145°	"A" band oscillator padder (C22) for maximum output.
6	A	Recheck steps 4 and 5.			
7	A	Antenna lead through a 200 mmf. capacitor	1400 kc	1400 kc 29°	"A" band R-F (C12) and antenna (C7) trimmers for maximum output.
8	B	Antenna lead through a 400 ohm resistor	7.5 mc	minimum capacity 0°	"B" band oscillator trimmer (C18) for maximum output.
9	B	Antenna lead through a 400 ohm resistor	7.0 mc	7.0 mc 18°	"B" band R-F (C13) and antenna (C8) trimmers for maximum output.*
10	C	Antenna lead through a 400 ohm resistor	12.0 mc	minimum capacity 0°	"C" band oscillator trimmer (C19) for maximum output.
11	C	Antenna lead through a 400 ohm resistor	11.5 mc	11.5 mc 51°	"C" band R-F (C14) and antenna (C10) trimmers for maximum output.*
12	D	Antenna lead through a 400 ohm resistor	15.4 mc	minimum capacity 0°	"D" band oscillator trimmer (C20) for maximum output.
13	D	Antenna lead through a 400 ohm resistor	15.0 mc	15.0 mc 51°	"D" band R-F (C15) and antenna (C9) trimmers for maximum output.*
14	E	Antenna lead through a 400 ohm resistor	21.8 mc	minimum capacity 0°	"E" band oscillator trimmer (C21) for maximum output.
15	E	Antenna lead through a 400 ohm resistor	21.5 mc	21.5 mc 35°	"E" band R-F (C16) and antenna (C11) trimmers for maximum output.*

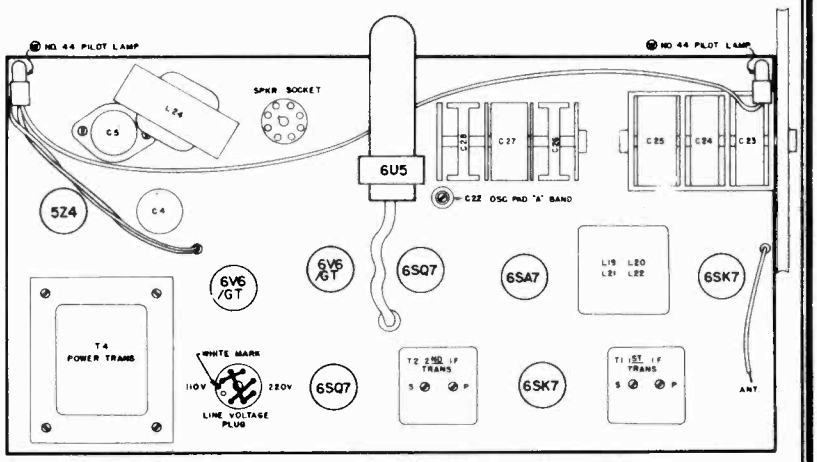
WESTINGHOUSE ELECTRIC CORP.

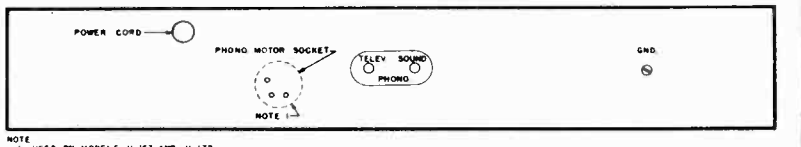
MODELS H-142, H-163, H-172, H-175



NOTE:
1. DUAL LINE FILTER (C57,C58) USED ONLY ON CHASSIS INCORPORATING UNSHIELDED POWER TRANSFORMER.
2. USED ON MODELS H-163 AND H-172.







NOTE
1. USED ON MODELS H-163 AND H-172

MODELS H-142, H-163, H-172, H-175 WESTINGHOUSE ELECTRIC CORP.

Part No.	Description
RCM20A470M	Capacitor, 47 mmf mica (C31, C32)
RCM20A101M	Capacitor, 100 mmf mica (C33, C34, C35)
RCM20A470K	Capacitor, 47 mmf mica (C36)
CC40UH151G	Capacitor, 150 mmf ceramic (C37)
CC25UJ100M	Capacitor, 10 mmf ceramic (C38)
V-3782S-22W	Capacitor, .0005 mfd 450 v. (C39, C40)
V-4953	Capacitor, .25 mfd 400 v. (C41)
V-3782S-30W	Capacitor, 0.2 mfd 400 v. (C42)
V-3782S-27W	Capacitor, .15 mfd 400 v. (C43)
V-3782S-29W	Capacitor, .005 mfd 400 v. (C44)
V-3782S-28W	Capacitor, .04 mfd 400 v. (C45)
V-3782S-21W	Capacitor, .02 mfd 480 v. (C46, C47, C48)
V-3782S-24W	Capacitor, .01 mfd 400 v. (C49, C50, C51)
V-3782S-25W	Capacitor, .05 mfd 400 v. (C52, C53, C54, C55, C56)
V-3241	Capacitor, dual .05 mfd 600 v. (C61, C62)
V-5064-1	Catch, bullet (H-172)
V-4468	Clamp, tuning eye
V-4453	Clamp, dial drive
V-4467	Clamp, glass plate mounting
V-4412	Coil, antenna, A band (L1, L2)
V-4413	Coil, antenna, B and C bands (L3, L4, L5, L6)
V-4414	Coil, antenna, D and E bands (L7, L8, L9, L10)
V-4416	Coil, oscillator, A, B and C bands (L11, L12, L13, L14)
V-4417	Coil, oscillator, D and E bands (L15, L16)
V-4415	Coil, R-F, A band (L17, L18)
V-4418	Coil, R-F interstage, B, C, D and E bands (L19, L20, L21, L22)
V-4419	Coil, R-F reactor (L23)
V-4200	Connector, phono
V-4421	Control, tone, 3.0 megohms (R1)
V-4420	Control, volume, 2.0 megohms tapped at 400K (R2) and switch (SW1)
V-3879	Cord, A-C power
V-4304S-4	Cord, dial drive
V-4479	Cover, back (H-142)
V-4525-2	Cushion, chassis
V-4469	Decal, Band A, B, C, D, E (H-142)
V-4470	Decal, off-volume (H-142, H-172)
V-4471	Decal, radio-phono (H-142, H-172)
V-4472	Decal, tone — bass-treble (H-142 H-172)
V-4473	Decal, tuning (H-142, H-172)
V-4474	Decal, Westinghouse (H-142, H-172)
V-5267	Decal, Band A, B, C, D, E (H-172)
V-4727	Dial Glass Assembly
V-4728	Dial Assembly (with pulleys)
V-4726	Disc, decorative
V-4721	Drive Shaft Assembly V-4401 Bushing, drive shaft V-4438 Shaft, drive
V-3371	Foot, recessed (H-142)
V-4902	Glide, furniture (H-172)
V-5196	Grille, metal (H-172)
V-5167	Grille Cloth (H-172)
V-4906	Grille Cloth (H-142)

Part No.	Description
V-7046	Adapter, resistance unit, for 120-140 volt line (PL2)
V-7047	Adapter, resistance unit, for 140-160 volt line (PL3)
V-4300-1	Adapter, phono motor (60 cycle) (H-172)
V-4462	Background, dial
V-4396	Band, rubber
V-4463-2	Bolt, chassis mounting
V-4511	Bracket, brace right (H-163, H-172)
V-4512	Bracket, brace left (H-163, H-172)
V-4713	Bracket Assy., idler, L.H.
V-4480	Bracket Assy., idler, R.H. (H-142, H-175)
V-4714	Bracket Assy., idler, upper R.H. (H-163, H-172)
V-4715	Bracket Assy., idler, lower R.H. (H-163, H-172)
V-4717	Bracket Assy., idler pulley (H-163, H-172)
V-4524	Bracket Assy., idler pulley (H-142, H-175)
V-4397	Bracket, brace (H-142, H-175)
V-4400	Bracket, radio-phono switch
V-4424	Bracket, foot mounting
V-4893	Bumper, recessed (H-163, H-172)
V-4241	Button, back cover (H-142)
V-1130	Cabinet (H-142)
V-4395	Cable, speaker (with plug)
V-4501-1	Capacitor, 120 mmfd ceramic (C1)
V-4501-2	Capacitor, 51 mmfd ceramic (C2)
V-4500-1	Capacitor, .002 mfd 180 v. polystyrene (C3)
V-4403	Capacitor, dry electrolytic, 40 mfd 450 v. (C4, C5)
V-4404	Capacitor, dry electrolytic, 8 mfd 250 v. (C6)
V-4405	Capacitor, trimmer, 3 gang (C7, C8, C9)
V-4406	Capacitor, trimmer, 2 gang (C10, C11)
V-4407	Capacitor, trimmer, 5 gang (C12, C13, C14, C15, C16, C17, C18, C19, C20, C21)
V-4408	Capacitor, padder, "A" band oscillator (C22)
V-4716	Capacitor Assy., variable tuning V-4409 Capacitor, variable 3 gang, L.F. (C23, C24, C25) V-4410 Capacitor, variable 3 gang, H.F. (C26, C27, C28) V-4460 Coupling Assy. V-4425 Grommet V-4427 Link, coupling V-4436 Screw, No. 6—32 slab head, cup point V-4437 Screw, No. 8—32 slab head, cup point V-4447 Spring, coupling V-4718 Drum Assy., tuning drive V-4431 Drum, drive V-4435 Scale, rotation V-4426 Hub, brass collar
RCM20A221M	Capacitor, 220 mmf mica (C29)
RCM20A271K	Capacitor, 270 mmf mica (C30)

MECHANICAL SPECIFICATIONS:

	Height	Width	Depth
Cabinet Dimensions (inches):			
H-142	15½	21½	12¾
H-172	34½	40	17¾
Overall Dimensions packed for Shipment (inches):			
H-142	18¾	27	17
H-172	39	44	22

Shipping Weight:	
H-142 (approx.)	75 lbs.
H-172 (approx.)	190 lbs.
Tuning Drive Ratio	16 to 1

WESTINGHOUSE ELECTRIC CORP. MODELS H-142, H-163, H-172, H-175

Part No.	Description
V-5363-5	Hinge, upper L.H. (H-172)
V-5363-6	Hinge, upper R.H. (H-172)
V-5272-1	Hinge, reversible (H-172)
V-3437	Insulator, electrolytic capacitor
V-4246	Knob, band
V-4477	Knob, radio-phono
V-4478	Knob, volume, tone and tuning
No. 44	Lamp, pilot
V-3333S-2	Medallion, Westinghouse (H-163, H-172)
V-4527	Plate, pilot lamp mounting (H-163, H-172)
V-4430	Plug, octal (PL1)
V-4483	Pointer
V-5195	Pull, door (H-172)
V-5194	Pull, drawer (H-172)
V-4432	Pulley, idler
V-4538	Reactor, filter (L24)
V-4433	Resistor, 0.5 ohms 2 w. (R3)
V-4434	Resistor, 185 ohms 5 w. (R4)
V-4545	Resistor, 560 ohms 10 w. (R5)
RC20AE225M	Resistor, 2.2 megohms ½ w. (R6, R7, R8)
RC20AE473M	Resistor, 47K ½w. (R9, R10)
RC41AE273K	Resistor, 27K 2 w. (R11)
RC30AE332M	Resistor, 3300 ohms 1 w. (R12)
RC20AE475M	Resistor, 4.7 megohms ½ w. (R13)
RC20AE332M	Resistor, 3300 ohms ½ w. (R14)
RC20AE154M	Resistor, 150K ½ w. (R15)
RC20AE154K	Resistor, 150K ½ w. (R16, R17)
RC20AE224K	Resistor, 220K ½ w. (R18, R19)
RC20AE225K	Resistor, 2.2 megohms ½ w. (R20)
RC20AE335K	Resistor, 3.3 megohms ½ w. (R21)
RC20AE565K	Resistor, 5.6 megohms ½ w. (R22)
RC20AE220K	Resistor, 22 ohms ½ w. (R23)
RC20AE151K	Resistor, 150 ohms ½ w. (R24)
RC20AE333K	Resistor, 33K ½ w. (R25)
RC20AE335M	Resistor, 3.3 megohms ½ w. (R26)
RC20AE104M	Resistor, 100K ½ w. (R27, R28)
RC20AE474M	Resistor, 470K ½ w. (R29, R30)
RC20AE124M	Resistor, 120K ½ w. (R31)
V-4485-11	Screw, Hex head, chassis mtg. (H-142)
V-3755-2	Screw, No. 6 Phillips head, self-tapping ¼ inch
V-3755-4	Screw, No. 6 Phillips head, self-tapping ⅜ inch
V-4439	Shield, fin, 1⅝ inch high
V-4440	Shield, fin, 2⅜ inch high
V-4168	Shield, socket
V-3353-7	Slide Mechanism, L.H. (H-172)
V-3353-8	Slide Mechanism, R.H. (H-172)
V-4444	Sockets, pilot light (2 assembled)
V-4461	Socket, tuning eye
V-4441	Socket, voltage selector
V-4514	Socket, molded octal tube
V-4499	Socket, motor (H-163, H-172)
V-4488	Spacer, cardboard, dial
V-4489	Speaker, 8" P.M.
V-4489-2	Cone and Voice Coil Assy. for V-4489 speaker
V-4334	Speaker, 12" P.M.
V-4334-1	Cone and Voice Coil Assy. for V-4334 speaker
V-4445	Spring, coil mounting, small
V-4446	Spring, coil mounting, large
V-4448	Spring, dial drive (H-163, H-172)
V-4490	Spring, dial drive (H-142, H-175)
V-5065-1	Strike, bullet catch (H-172)
V-4494	Stud, pulley
V-4449	Stud, variable capacitor mounting
V-4451	Switch, band (SW2, SW3, SW4, SW5)
V-4452	Switch, radio-phono (SW6)
V-3643	Teenut, phono mounting (H-172)
V-4196	Terminal Board, 1 lug
V-4443	Terminal Board, 2 lugs
V-4442	Terminal Board, 3 lugs
V-4454	Terminal Board, 4 lugs
V-4456	Transformer, 1st I-F (L25, L26, C57, C58)
V-4457	Transformer, 2nd I-F (L27, L28, L29, C59, C60)
V-4458	Transformer, output (T3)
V-4459	Transformer, power (T4)
V-3267S-8	Washer, flat, chassis mounting
V-4252-2	Washer, felt
V-3506S-1	Washer, Neoprene, chassis mounting

FREQUENCY RANGES:

Broadcast	535 to 1610 kc.
Short Wave (1)	2.4 to 7.5 mc.
Short Wave (2)	8.5 to 12.0 mc.
Short Wave (3)	12.6 to 15.4 mc.
Short Wave (4)	18.0 to 21.8 mc.

INTERMEDIATE FREQUENCY: 455 kc.

TUBE COMPLEMENT:

1	6SK7	R-F Amplifier
1	6SA7	Converter
1	6SK7	I-F Amplifier
1	6SQ7	Det., A.V.C., A-F Amp.
1	6SQ7	Phase Inverter
2	6V6GT/G	Power Output Amp.
1	6U5	Tuning Eye
1	5Z4	Rectifier

PILOT LAMPS:

2 Westinghouse No. 44 ..... 6.3 v., 0.25 amp.

POWER OUTPUT:

Undistorted	8 watts
Maximum	11 watts

LOUDSPEAKER:

Type	P.M. dynamic
Voice Coil Impedance at 400 cycles	3.2 ohms
Size (H-142)	8 inches
Size (H-163, H-172, H-175)	12 inches

OPERATING VOLTAGES (40-60 cycles A-C):

100 to 120 volts—Insert line voltage plug beside power transformer in 110 v position.

120 to 140 volts—Insert adapter V-7046 in place of line voltage plug.

140 to 160 volts—Insert adapter V-7047 in place of line voltage plug.

200 to 240 volts—Insert line voltage plug beside power transformer in 220 v. position.

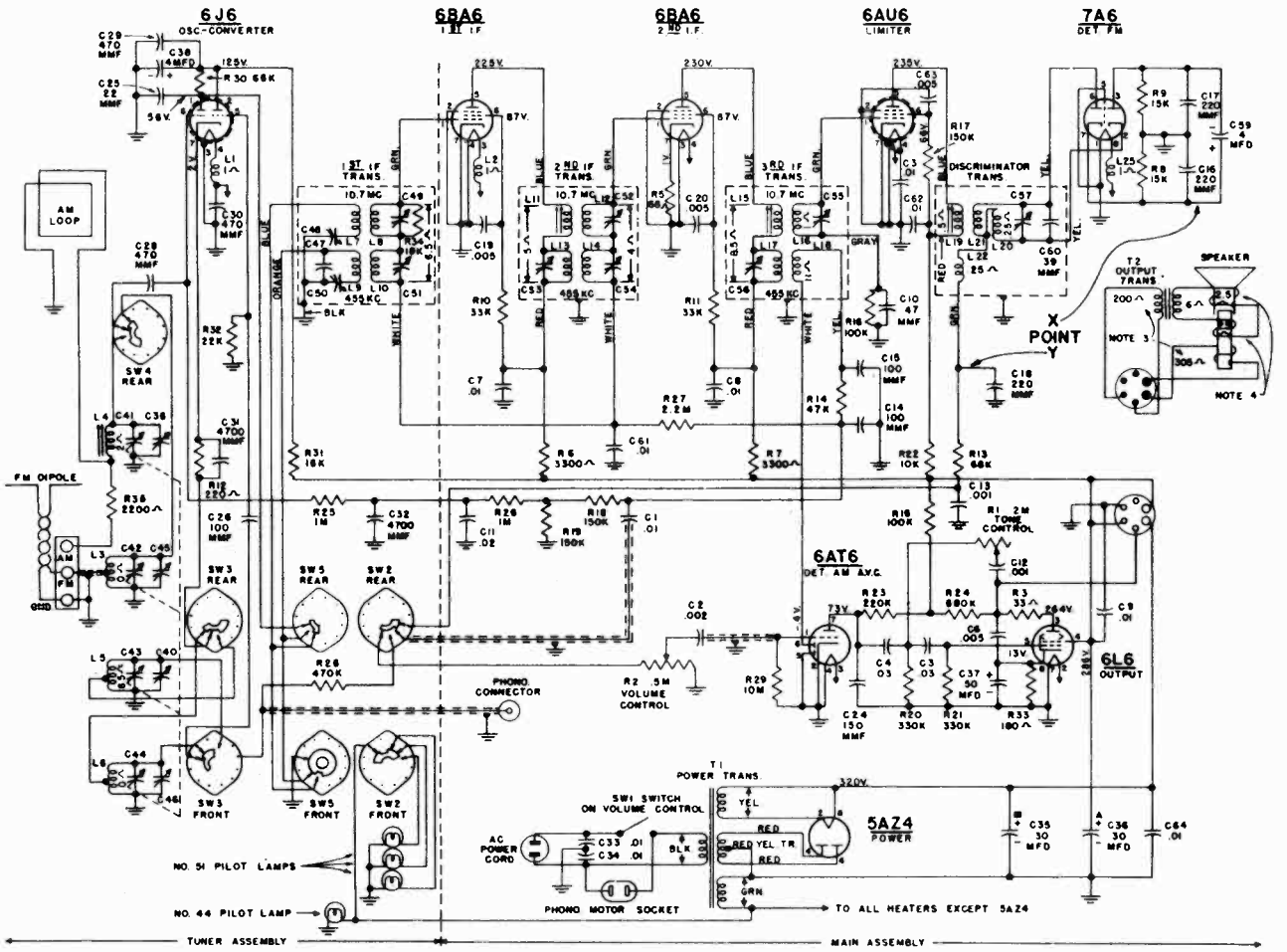
POWER CONSUMPTION (at 110 volts, 60 cycles): 100 watts

SPECIAL PROVISION (H-163 and H-172):

110 volts A-C is supplied to the phono motor socket on rear of chassis, regardless of line voltage.

MODELS H-161, H-168, H-168A, H-168B Revised

WESTINGHOUSE ELECTRIC CORP.



NOTE:
1. SELECTOR SWITCH SW2, SW3, SW4 AND SW5 IS SHOWN IN EXTREME COUNTER CLOCKWISE POSITION (FM BAND). SECOND POSITION CLOCKWISE IS AM BAND. THIRD POSITION CLOCKWISE IS PHONO.
2. ALL VOLTAGES MEASURED FROM CHASSIS (GND.) USING 20,000 OHMS/VOLT METER-LINE VOLTAGE 117 V.A.C. VOLTAGES SHOULD BE AS SHOWN ± 20 %.
3. SPEAKER PLUG REMOVED.
4. VOICE COIL DISCONNECTED.

CHANGES IN V-2118 CHASSIS

Improved performance was obtained in later production of the V-2118 chassis by incorporating the changes listed below. A schematic diagram of the revised chassis is shown on the back of this sheet, and parts list additions appear below.

1. The connection between the antenna loading coil (L4) and the bandswitch (SW4) was moved to the top of the coil.
2. A resistor (R35) was inserted in place of C27 in the AM antenna circuit.
3. Capacitor (C58) in the AM antenna circuit was deleted.
4. R32 now connects between the 6J6 oscillator grid and ground instead of between the 6J6 oscillator grid and cathode.
5. Filament choke (L25) was added to the 7A6 heater circuit.
6. C64 was added across the power supply filter circuit.
7. C6 now connects between resistor (R3) and 6L6 cathode instead of between 6L6 plate and cathode.
8. A phono motor power socket was mounted on the rear of the chassis.

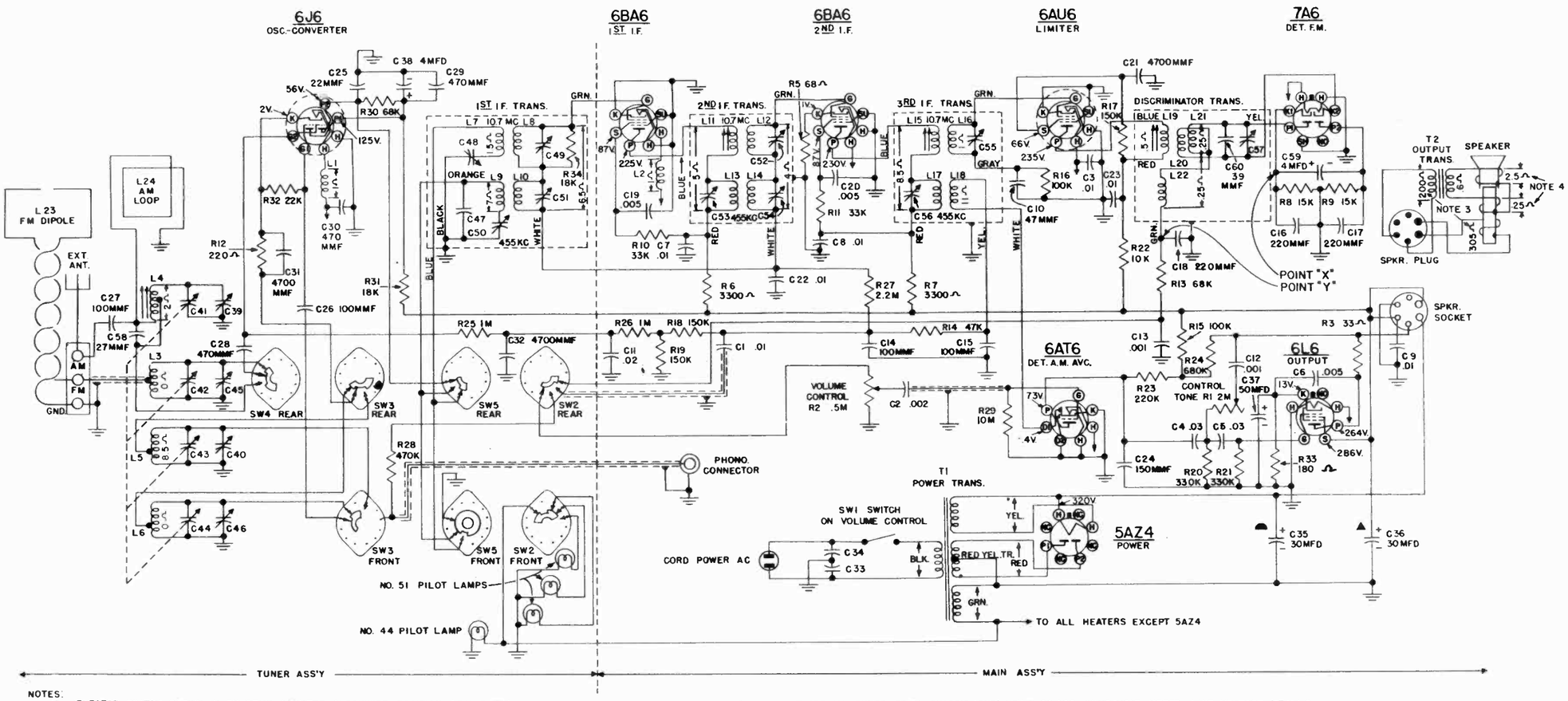
These parts should be added to the parts list in the original service notes. The list will then apply to both the original and the revised chassis.

PARTS LIST ADDITIONS

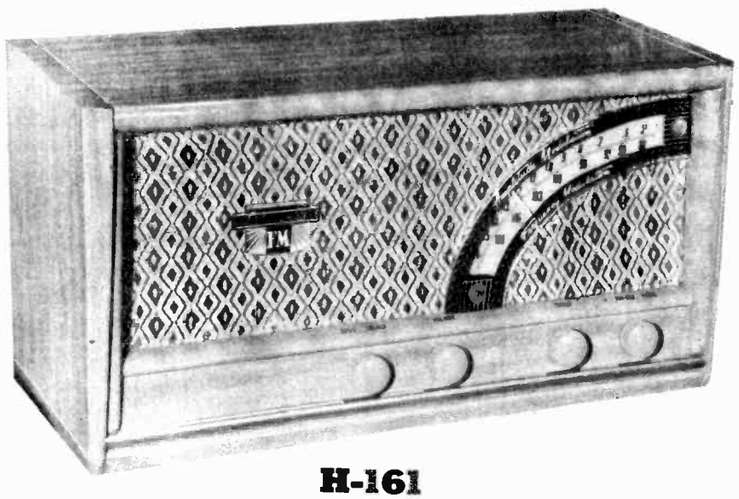
Part No.	Description
RC10AE222M	Resistor, 2200 ohms 1/4 w. (R35) .....
V-5040-15	Capacitor, .01 mfd 600 v. (C61, C62) .
V-5040-11	Capacitor, .005 mfd 600 v. (C63) .....
RCP10W6103M	Capacitor, .01 mfd 600 v. (C64) .....
V-4638	Choke, filament (L25) .....
V-5405	Socket, phono motor power .....

WESTINGHOUSE ELECTRIC CORP.

MODELS H-161, H-168,
H-168A, H-168B
CHASSIS V2118



NOTES:
1. ELECTOR SWITCH SHOWN IN EXTREME COUNTER CLOCKWISE POSITION (F.M. BAND). SECOND POSITION CLOCKWISE IS AM. BAND. THIRD POSITION CLOCKWISE IS PHONO.
2. ALL VOLTAGES MEASURED FROM CHASSIS (GND) USING 20,000 OHMS/VOLT METER – LINE VOLTAGE 117 V.A.C. VOLTAGES SHOULD BE AS SHOWN ± 20 PERCENT.
3. SPEAKER PLUG REMOVED.
4. VOICE COIL DISCONNECTED.



H-161
MAHOGANY AND BLONDE

SPECIFICATIONS

FREQUENCY RANGES:

Standard Broadcast	540 to 1615 kc.
Frequency Modulation	88 to 108 mc.

INTERMEDIATE FREQUENCIES:

Amplitude Modulation	455 kc.
Frequency Modulation	10.7 mc.

TUBE COMPLEMENT:

1	6J6	Converter
2	6BA6	1st and 2nd I-F Amp.
1	6AU6	Limiter (FM)
1	7A6	Ratio Det. (FM)
1	6AT6	Det. (AM), AVC and 1st A-F Amp.
1	6L6 or 6L6G	Output Amp.
1	5AZ4	Rectifier

PILOT LAMPS:

1 Westinghouse No. 44	6.3 v., 0.25 amp.
3 Westinghouse No. 51	6.3 v., 0.20 amp.

POWER OUTPUT:

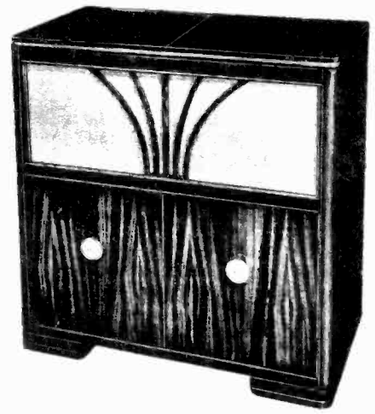
Undistorted	6 watts
Maximum	9 watts

LOUDSPEAKER:

Size and Type (H-161)	8" Electro Dynamic
Size and Type (H-168 and H-168A)	10" Electro Dynamic
Field Resistance	305 ohms
Voice Coil Impedance	3.2 ohms

OPERATING VOLTAGE: 105 to 120 volts, 50-60 cycles A-C

POWER CONSUMPTION (radio section): 110 watts



H-168 and H-168A
MAHOGANY AND BLONDE

RECORD CHANGERS: For H-168, V-M Model 800, RCD.CH. 17-1; for H-168A, Webster Model 56, RCD.CH. 15-10; for H-168B, Webster Model 50, RCD.CH. 15-1.

WESTINGHOUSE ELECTRIC CORP. MODELS H-161, H-168, H-168A, H-168B CHASSIS V2118

ALIGNMENT

BROADCAST BAND—AMPLITUDE MODULATION

Connect an output meter across the speaker voice coil.

While making the following adjustments, keep the volume control set for maximum output, the tone control set on treble, and the signal generator output attenuated to avoid AVC action.

Step	Connect Signal Generator to—	Signal Gen. Freq.	Radio Dial	Adjust for Maximum Output
1.	Set Phono-Band Switch to "AM"			
2.	6bA6, 2nd I-F, control grid through a 0.1 mfd capacitor	455 kc	540 kc	455 kc primary trimmer of 3rd I-F transformer.
3.	6BA6, 1st I-F, control grid through a 0.1 mfd capacitor	455 kc	540 kc	455 kc primary and secondary trimmers of 2nd I-F trans.
4.	6J6, converter, control grid through a 0.1 mfd capacitor	455 kc	540 kc	455 kc primary and secondary trimmers of 1st I-F trans.
5.	6J6, converter, control grid through a 0.1 mfd capacitor	455 kc	540 kc	Peak all 455 kc I-F transformer trimmers.
6.	Radiated signal (no actual connection)	1600 kc	1600 kc	AM oscillator trimmer.
7.	Radiated signal	600 kc	600 kc	AM antenna padder.
8.	Radiated signal	1400 kc	1400 kc	AM antenna trimmer.
9.	Recheck steps 7 and 8 in order given. "Rock" tuning capacitor while adjusting AM antenna trimmer.			

FM BAND—FREQUENCY MODULATION

Do not align the 10.7 mc I-F circuits until all 455 kc I-F adjustments have been completed.

Step	Connect Signal Generator to—	Signal Gen. Freq.	Radio Dial	Adjust—
1.	Set Phono-Band switch to "FM."			
2.	Connect a vacuum tube voltmeter between point X (see Figs. 3 and 4) and ground (chassis).			
3.	6BA6, 2nd I-F, control grid through a .001 mfd mica capacitor	Unmodulated 10.7 mc	88 mc	10.7 mc primary and secondary of 3rd I-F trans. and primary of discriminator trans. for max. voltage.
4.	6BA6, 1st I-F, control grid through a .001 mfd mica capacitor	Unmodulated 10.7 mc	88 mc	10.7 mc primary and secondary of 2nd I-F trans. for max. voltage.
5.	Stator of FM tuning capacitor (C42) through a .01 mfd mica capacitor	Unmodulated 10.7 mc	88 mc	10.7 mc primary and secondary of 1st I-F trans. for max. voltage.
6.	Connect the vacuum tube voltmeter between point Y (Figs. 3 and 4) and chassis.			
7.	Stator of FM tuning capacitor (C42) through a .01 mfd mica capacitor	Unmodulated 10.7 mc	88 mc	Secondary of discriminator trans. for zero voltage. The voltage will change polarity as the trimmer is tuned through resonance. Tune carefully for zero voltage.
8.	Connect the vacuum tube voltmeter between point X and chassis.			
9.	Stator of FM tuning capacitor (C42) through a .01 mfd mica capacitor	Unmodulated 10.7 mc	88 mc	Primary of discriminator trans. for max. voltage.
10.	FM antenna terminal through a 72 ohm non-inductive resistor	Unmodulated 105 mc	105 mc	FM oscillator trimmer for max. voltage.*
11.	FM antenna terminal through a 72 ohm non-inductive resistor	Unmodulated 105 mc	105 mc	FM antenna trimmer for max. voltage *— "rock" tuning capacitor while adjusting.
12.	Check dial calibration and tracking at 90 mc.**			

* The FM oscillator and antenna trimmers can be adjusted by using the thumb and forefinger to rotate the outside drum of the capacitor. Hand capacity effects may be reduced by holding the heel of the hand against the 1st I-F trans. can.

** After the radio has been aligned at 105 mc., check calibration by tuning to a 90 mc. signal from the generator. If the dial pointer indicates 90 mc., no further adjustments are necessary. If the pointer is on the high frequency side of 90 mc., slightly *expand* the length of oscillator coil (L6) and repeat steps 10, 11, and 12 above until dial calibration is correct. If the pointer is on the low frequency side of 90 mc., slightly *compress* length of oscillator coil (L6) and repeat steps 10, 11, and 12 until dial calibration is correct.

After calibration has been checked and the antenna circuit has been "peaked" at 105 mc., check the antenna circuit tracking by tuning to a 90 mc. signal and rotating the FM antenna trimmer. If the "peak" setting is the same at 90 mc. as it was at 105 mc., no further adjustments are necessary. If the trimmer capacitance must be increased to obtain maximum output at 90 mc., slightly compress the length of antenna coil (L3) and repeat steps 11 and 12 until correct tracking is obtained. If the trimmer capacitance must be decreased to obtain maximum output at 90 mc., slightly expand the length of antenna coil (L3) and repeat steps 11 and 12 until correct tracking is obtained.

MODELS H-161, H-168, H-168A, H-168B CHASSIS V2118 WESTINGHOUSE ELECTRIC CORP.

PARTS LIST FOR MODELS H-161, H-168 AND H-168A

Part No.	Description
V-4924-1	Antenna, FM Dipole (L23) (H-161)
V-4924-2	Antenna, FM Dipole (L23) (H-168 and H-168A)
V-4686	Antenna, AM Loop (L24) (H-161)
V-4951	Antenna, AM Loop (L24) (H-168 and H-168A)
V-4687	Background, front glass plate (H-161)
V-5293	Background, front glass plate (H-168 and H-168A)
V-4688	Baffle & Grille Cloth Assy. (H-161)
V-4169-1	Base, shield, miniature tube
V-4668	Bearing, tuning shaft and plate assy.
V-4631	Bracket, left dial mounting
V-4632	Bracket, right dial mounting
V-4633	Bracket Assy., main dial mounting
V-4657	Bracket Assy., pointer mounting
V-4689	Bracket, speaker mounting (H-161)
V-5070	Bracket, shock mounting (H-168 and H-168A)
V-4655	Bracket, dial light
V-4836S-4	Button, hole plug
V-1131-1	Cabinet (H-161 Mahogany)
V-1131-2	Cabinet (H-161 Blonde)
V-1137-1	Cabinet (H-168 Mahogany)
V-1137-2	Cabinet (H-168 Blonde)
V-1148-1	Cabinet (H-168A Mahogany)
RCP10W4103A	Capacitor, .01 mfd 400 v. (C1)
RCP10W6202A	Capacitor, .002 mfd 600 v. (C2)
V-5040-13	Capacitor, .01 mfd 200 v. (C3)
RCP10W4303A	Capacitor, .03 mfd 400 v. (C4, C5)
RCP10M6502A	Capacitor, .005 mfd 600 v. (C6)
V-5040-15	Capacitor, .01 mfd 600 v. (C7, C8, C9)
RCM20A470M	Capacitor, 47 mmf mica (C10)
RCP10W4203A	Capacitor, .02 mfd 400 v. (C11)
RCP10W6102A	Capacitor, .001 mfd 600 v. (C12, C13)
RCM20A101M	Capacitor, 100 mmf mica (C14, C15)
RCM20A221K	Capacitor, 220 mmf mica (C16, C17, C18)
V-5040-11	Capacitor, .005 mfd 600 v. (C19, C20)
RCM30A472M	Capacitor, 4700 mmf mica (C21)
RCM30A103M	Capacitor, .01 mfd mica (C22, C23)
RCM20A151M	Capacitor, 150 mmf mica (C24)
RCM20B220K	Capacitor, 22 mmf mica (C25)
R3CC32CG101K	Capacitor, 100 mmf ceramic (C26)
R3CC26SL101M	Capacitor, 100 mmf ceramic (C27)
RCM20A471M	Capacitor, 470 mmf mica (C28)
R5CC20ZY471M	Capacitor, 470 mmf ceramic (C29 C30)
R5CC36ZY472M	Capacitor, 4700 mmf ceramic (C31, C32)
V-4634	Capacitor, dual line filter .01-.01 mfd 600 v. (C33, C34)
V-4635	Capacitor, dual filter, electrolytic 30-30 mfd 450 v. (C35, C36)
V-4636	Capacitor, electrolytic 50 mfd 25 v. C37
V-4885	Capacitor, electrolytic 4 mfd 450 v. (C38, C59)
V-4671	Capacitor, AM antenna trimmer (C39)
V-4672	Capacitor, AM oscillator trimmer (C40)
V-4673	Capacitor, variable 2 gang (C41, C42, C43, C44, C45, C46)
R3CC25CG270J	Capacitor, 27 mmf ceramic (C58)
V-5307-1	Cardboard & Grille Cloth Assy., L.H. side (H-168, H-168A Mahogany)
V-5307-2	Cardboard & Grille Cloth Assy., L.H. side (H-168 Blonde)
V-4898	Catch, bullet
V-5071	Channel, rubber (H-168, H-168A)
V-4638	Choke, filament, 1.1 microhenries (L1, L2)
V-4877	Clamp, power cord, closed
V-3337S	Clamp, power cord, open

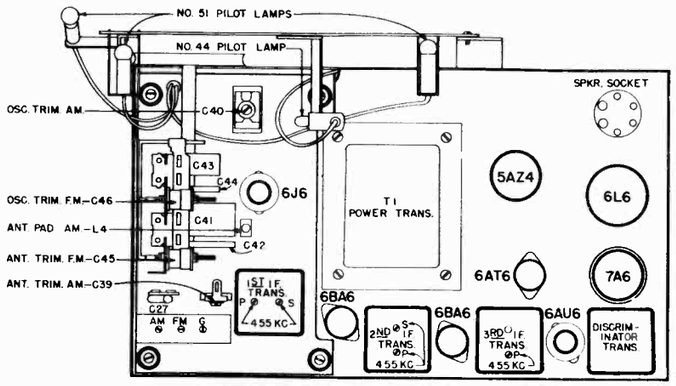
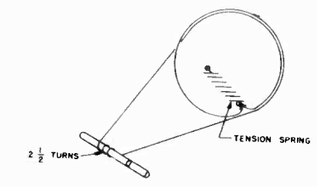


FIG. 1—CHASSIS LAYOUT



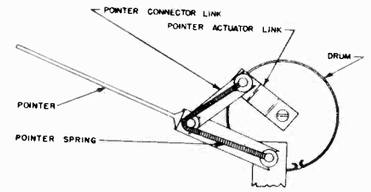


FIG. 2—DIAL DRIVE MECHANISM

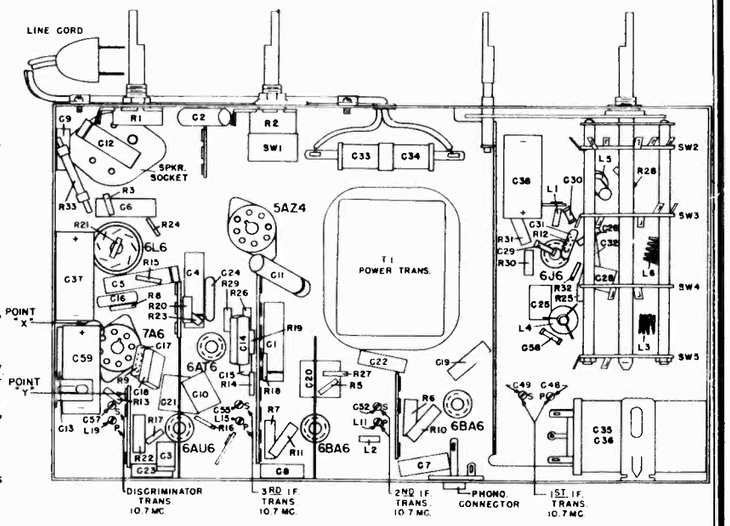


FIG. 3—BOTTOM VIEW OF CHASSIS

WESTINGHOUSE ELECTRIC CORP. MODELS H-161, H-168, H-168A, H-168B CHASSIS V2118

PARTS LIST FOR MODELS H-161, H-168 AND H-168A

Part No.	Description
RC30AE103K	Resistor, 10,000 ohms 1 w. (R22)
RC10AE224K	Resistor, 220,000 ohms ¼ w. (R23)
RC10AE684K	Resistor, 680,000 ohms ¼ w. (R24)
RC10AE105M	Resistor, 1 megohm ¼ w. (R25, R26)
RC10AE225M	Resistor, 2.2 megohms ¼ w. (R27)
RC10AE474M	Resistor, 470,000 ohms ¼ w. (R28)
RC10AE106M	Resistor, 10 megohms ¼ w. (R29)
RC20AE683K	Resistor, 68,000 ohms ½ w. (R30)
RC30AE183K	Resistor, 18,000 ohms 1 w. (R31)
RC10AE223K	Resistor, 22,000 ohms ¼ w. (R32)
V-4648	Resistor, cathode 180 ohms 2 w. (R33)
V-3755S-11	Screw, chassis mounting (H-161)
V-3570S-5	Screw, tuner assembly mounting
V-3570S-11	Screw, Hex head, chassis mtg. (H-168 and H-168A)
V-3755S-9	Screw, Phillips head, chassis mtg. (H-168 and H-168A)
V-4678	Shaft, tuning
V-4649-3	Shield, spiral (2¾ inches long)
V-4649-2	Shield, spiral (7½ inches long)
V-4884	Shield, loktal tube
V-4861	Shield, flat steel (under chassis)
V-4169-2	Shield, miniature tube
V-3344S-2	Sleeve, spacer, tuner assy. mounting
V-3288S	Socket, speaker
V-3870-1	Socket, lock-in tube
V-3275S	Socket, molded octal tube
V-4292S-1	Socket, miniature molded
V-4679	Socket, dial light
**V-4702	Speaker, 8" Electro Dynamic for H-161
**V-4945	Speaker, 10" Electro Dynamic for H-168 and H-168A
V-4650	Spring, pointer
V-4057	Spring, dial drive
V-3258S	Spring, knob
V-4900	Strike, bullet catch
V-4651	Stud, trimount, plastic dial mounting
V-5295-1	Support, lid, L.H. (Mahogany)
V-5295-2	Support, lid, L.H. (Blonde)
V-5295-3	Support, lid, R.H. (Mahogany)
V-5295-4	Support, lid, R.H. (Blonde)
V-4682	Switch, selector (SW2, SW3, SW4, SW5)
V-4704	Tab, AM
V-4705	Tab, FM
V-3643	Teenut, record changer mounting
V-4684	Terminal Board, ANT-GND
V-4667	Terminal Board, 1 lug
V-4664	Terminal Board, 2 lugs
V-3486	Terminal Board, 3 lugs
V-4665	Terminal Board, 9 lugs
V-4627	Transformer, 1st I-F (L7, L8, L9, L10, R34, C47, C48, C49, C50, C51)
V-4628	Transformer, 2nd I-F (L11, L12, L13, L14, C52, C53, C54)
V-4629	Transformer, 3rd I-F (L15, L16, L17, L18, C55, C56)
V-4630	Transformer, discriminator (L19, L20, L21, L22, C57, C60)
V-4653	Transformer, power (T1)
V-4945-1	Transformer, output for V-4945 speaker stamped 285
V-4945-3	Transformer, output for V-4945 speaker stamped 191
V-4702-1	Transformer, output for V-4702 speaker stamped 285
V-3267S-1	Washer, chassis mounting, small
V-3267S-6	Washer, chassis mounting, large
V-3267S-10	Washer, record changer mounting
V-3668S	Washer, felt
V-4904-1	Washer, finishing (H-168 and H-168A Mahogany)
V-4904-2	Washer, finishing (H-168 Blonde)

Part No.	Description
V-4685	Clamp, spring, filter capacitor mtg.
V-5296	Clip, front glass plate mtg.
V-4883	Coil, FM antenna (L3)
V-4675	Coil, antenna loading (L4)
V-4676	Coil, AM oscillator (L5)
V-4882	Coil, FM oscillator (L6)
V-4945-2	Cone & Voice Coil Assy. for V-4945 speaker stamped 285
V-4945-4	Cone & Voice Coil Assy. for V-4945 speaker stamped 191
V-4702-2	Cone & Voice Coil Assy. for V-4702 speaker stamped 285
V-3254S	Connector, phono
V-4639	Control, tone, 2 megohms (R1)
V-4640	Control, volume, .5 megohms (R2) and switch (SW1)
V-4349-2	Cord, Power A-C
V-4304S-7	Cord Assembly, dial drive
V-4958	Cord, A-C power assy. (H-168 and H-168A)
V-4525-3	Cushion, chassis (H-168 and H-168A)
V-3885	Cushion, lid (H-168 and H-168A)
V-4690	Decal, band
V-4691	Decal, tone
V-4692	Decal, tuning
V-4693	Decal, volume
V-4642	Dial, plastic
V-4643	Eyelet, chassis mtg. (H-161)
V-3371	Foot, recessed (H-161)
V-4902	Glide, furniture (H-168 and H-168A)
V-4948-1	Grille Cloth, R.H. side (H-168 and H-168A)
V-3345S-4	Grommet, tuner assembly mounting
V-4644	Grommet, plain, chassis mounting
V-4852	Grommet, chassis mounting (T shaped)
V-4903-1	Hinge, door (H-168 and H-168A Mahogany)
V-4903-2	Hinge, door (H-168 Blonde)
V-3510	Hinge, lid (H-168 and H-168A Mahogany)
V-4321	Hinge, lid (H-168 Blonde)
V-4697S-1	Knob, volume, tuning and tone (Mahogany)
V-4697S-3	Knob, volume, tuning and tone (Blonde)
V-4697S-2	Knob, band (Mahogany)
V-4697S-4	Knob, band (Blonde)
No. 44	Lamp, pilot, background
No. 51	Lamp, pilot, AM, FM, edge
V-4645	Link, pointer connector
V-4660	Link Assembly, pointer actuator
V-4696	Nameplate, Westinghouse FM
√-5303	Needle, phono, sapphire tip
V-3926	Nut, speed, ⅛ inch, nameplate mtg.
V-4701	Plate, front glass (H-161)
V-5297	Plate, front glass (H-168 and H-168A)
V-4647	Pointer Assembly
V-5294	Pull, door (H-168 and H-168A)
RC10AE330K	Resistor, 33 ohms ¼ w. (R3)
RC10AE680K	Resistor, 68 ohms ¼ w. (R5)
RC30AE332K	Resistor, 3300 ohms 1 w. (R6, R7)
RC10AE153J	Resistor, 15,000 ohms ¼ w. (R8, R9)
RC30AE333K	Resistor, 33,000 ohms 1 w. (R10, R11)
RC10AE221K	Resistor, 220 ohms ¼ w. (R12)
RC10AE683M	Resistor, 68,000 ohms ¼ w. (R13)
RC10AE473M	Resistor, 47,000 ohms ¼ w. (R14)
RC10AE104K	Resistor, 100,000 ohms ¼ w. (R15, R16)
RC20AE154K	Resistor, 150,000 ohms ½ w. (R17)
RC10AE154M	Resistor, 150,000 ohms ¼ w. (R18, R19)
RC10AE334K	Resistor, 330,000 ohms ¼ w. (R20, R21)

MODELS H-164, H-166, H-167, H-166A

WESTINGHOUSE ELECTRIC CORP.

H-166 & H-166A

H-164

H-167

For H-166 and H-167 record changer information, refer to V-4914 Automatic Record Changer Service Notes.

For information on the V-5699 record changer used in the Model H-166A, refer to V-4944 Automatic Record Changer Service Notes. The V-5699 and V-4944 record changers are similar except that the pickup arms, pickup cartridges, and power cords are different.

SPECIFICATIONS

FREQUENCY RANGES:
- Standard Broadcast ..... 540 to 1600 kc.
- Frequency Modulation ..... 88 to 108 mc.

INTERMEDIATE FREQUENCIES:
- Amplitude Modulation ..... 455 kc.
- Frequency Modulation ..... 10.7 mc.

TUBE COMPLEMENT:
- 1 7F8 ..... R-F Amp. (FM)
- 1 7F8 ..... Osc.-converter
- 2 6BA6 ..... 1st and 2nd I-F Amp.
- 1 6AU6 ..... Limiter (FM)
- 1 6H6GT ..... Ratio Det. (FM)
- 1 6AT6 ... Det. (AM), AVC and 1st A-F Amp.
- 1 6AT6 ..... Phase Inverter
- 2 6Y6G ..... Output Amp.
- 1 5U4G ..... Rectifier
- 1 6SC7 Phono. Pre-Amp. (H-166, H-166A and (H-167)

PILOT LAMPS:
- 2 Westinghouse No. 44 .... 6.3 v., 0.25 amp.

POWER OUTPUT:
- Undistorted ..... 15 watts
- Maximum ..... 18 watts

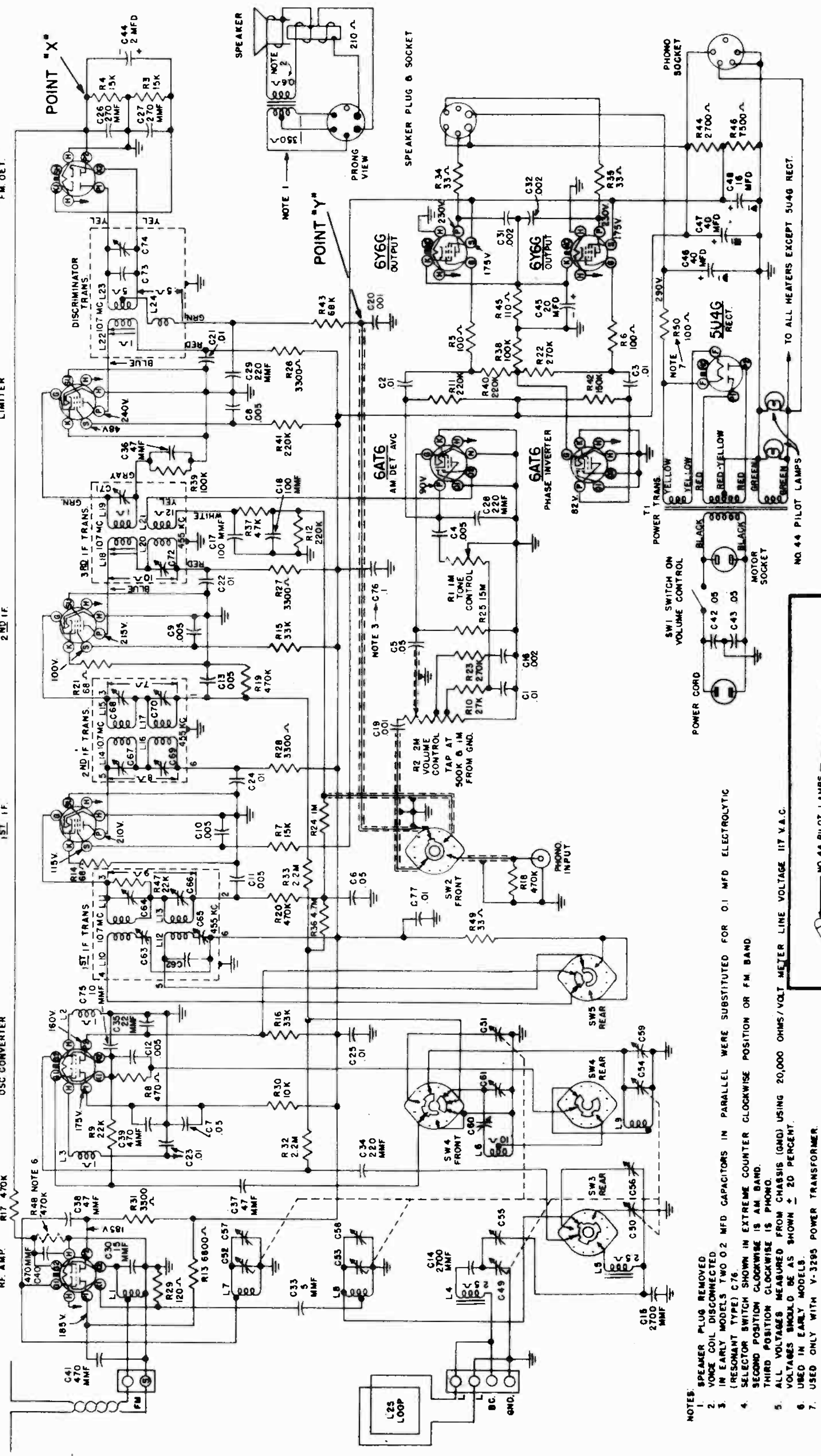
LOUDSPEAKER: ..... 12" Electro-dynamic

OPERATING VOLTAGE: 105 to 120 volts, 50-60 cycles A-C

POWER CONSUMPTION(radio section): 150 watts

WESTINGHOUSE ELECTRIC CORP.

MODELS H-164, H-166, H-167, H-166A



NOTES:
1. SPEAKER PLUG REMOVED
2. VOICE COIL DISCONNECTED
3. IN EARLY MODELS TWO 0.2 MFD CAPACITORS IN PARALLEL WERE SUBSTITUTED FOR 0.1 MFD ELECTROLYTIC (RESONANT TYPE) C76
4. SELECTOR SWITCH SHOWN IN EXTREME COUNTER CLOCKWISE POSITION OR FM BAND. SECOND POSITION CLOCKWISE IS AM BAND. THIRD POSITION CLOCKWISE IS PHONO.
5. ALL VOLTAGES MEASURED FROM CHASSIS (GND) USING 20,000 OHMS/VOLT METER LINE VOLTAGE 117 V.A.C. VOLTAGES SHOULD BE AS SHOWN ± 20 PERCENT.
6. USED IN EARLY MODELS.
7. USED ONLY WITH V-3295 POWER TRANSFORMER.

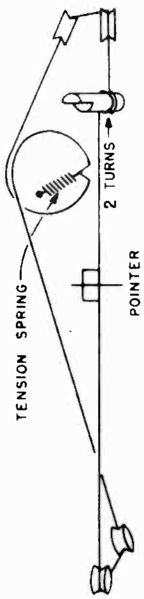
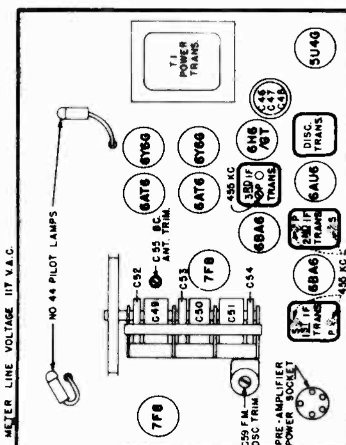


Fig. 5 - DIAL DRIVE MECHANISM



NOTE: A FEW EARLY MODELS (CHASSIS V-2119) HAD 1ST AND 2ND IF TRANSFORMER ADJUSTMENTS AS SHOWN BY DOTTED LINE.

Fig. 4 - TOP VIEW OF MAIN CHASSIS

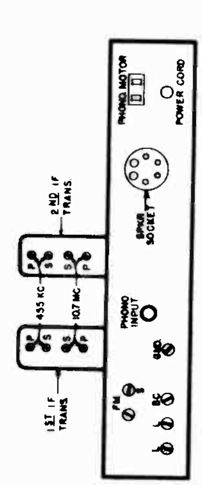


Fig. 3 - REAR VIEW OF MAIN CHASSIS

RECORD CHANGER: for MODEL H-166A: V-M Model 800, RCD.CH. 17-1
for MODELS H-166, H-167: V-M Model 400, RCD.CH. 15-1

MODELS H-164, H-166, H-167, H-166A

WESTINGHOUSE ELECTRIC CORP.

ALIGNMENT

BROADCAST BAND — AMPLITUDE MODULATION

Connect an output meter across the speaker voice coil

While making the following adjustments, keep the volume control set for maximum output, the tone control set on treble, and the signal generator output attenuated to avoid AVC action.

Step	Connect Signal Generator to —	Signal Generator Frequency	Radio Dial	Adjust for Maximum Output
1.	Set PHONO-BAND switch to "AM"			
2.	Pin No. 1 of 6BA6, 2nd I-F, through a 0.1 mfd capacitor	455 kc	550 kc	455 kc primary trimmer of 3rd I-F trans.
3.	Pin No. 1 of 6BA6, 1st I-F, through a 0.1 mfd capacitor	455 kc	550 kc	455 kc secondary and primary trimmers of 2nd I-F trans.
4.	Pin No. 1 of 7F8, converter, through a 0.1 mfd capacitor	455 kc	550 kc	455 kc secondary and primary trimmers of 1st I-F trans.
5.	Radiated signal (no actual connection)	1500 kc	1500 kc	BC osc. trimmer (C61) (make certain that loop antenna is connected to "L" terminals)
6.	Radiated signal (no actual connection)	1400 kc	1400 kc	BC converter (C56) and BC antenna (C55) trimmers
7.	Radiated signal (no actual connection)	600 kc	600 kc	BC oscillator padder (C60) ("rock-in" adjustment)
8.	Repeat steps 5, 6, and 7			

FM BAND — FREQUENCY MODULATION

Do not align the 10.7 mc. I-F circuits until all 455 kc I-F adjustments have been completed.

Step	Connect Signal Generator to —	Signal Generator Frequency	Radio Dial	Adjust
1.	Set PHONO-BAND switch to "FM"			
2.	Connect a vacuum tube voltmeter between point "X" (See Figs. 1 and 2) and ground (chassis).			
3.	Place a temporary short between rotor and stator of FM osc. section of tuning capacitor (C54).			
4.	*Detune* 10.7 mc. secondary trimmers of 1st, 2nd, and 3rd I-F transformers and secondary trimmer of discriminator transformer by turning screws ½ turn toward tight position.			

WESTINGHOUSE ELECTRIC CORP. MODELS H-164, H-166, H-167, H-166A

FM BAND — FREQUENCY MODULATION — CONTINUED

Step	Connect Signal Generator to —	Signal Generator Frequency	Radio Dial	Adjust
5.	Stator of FM converter tuning capacitor (C53) through a .001 mfd mica capacitor	UNMODULATED 10.7 mc	88 mc	10.7 mc primary trimmers of discriminator, 3rd I-F, 2nd I-F, and 1st I-F transformers (in order given) for maximum voltage
6.	Stator of FM converter tuning capacitor (C53) through a .001 mfd mica capacitor	UNMODULATED 10.7 mc	88 mc	10.7 mc secondary trimmers of 1st, 2nd, and 3rd I-F transformers (in order given for maximum voltage. NOTE: *Do not* re-peak the primary trimmers.
7.	Connect the vacuum tube voltmeter between point "Y" (Figs. 1 and 2) and chassis.			
8.	Stator of FM converter tuning capacitor (C53) through a .001 mfd mica capacitor	UNMODULATED 10.7 mc	88 mc	Secondary of discriminator trans. for zero voltage. The voltage will change polarity as the trimmer is tuned through resonance. Tune carefully for zero voltage.
9.	Connect the vacuum tube voltmeter between point "X" and chassis.			
10.	Remove the short from the FM oscillator tuning capacitor.			
11.	FM antenna terminal through a 72 ohm resistor	UNMODULATED 105 mc	105 mc	FM oscillator trimmer (C59) for max. voltage*
12.	FM antenna terminal through a 72 ohm resistor	UNMODULATED 98 mc	98 mc	FM converter (C58) and FM R-F (C57) trimmers for max. voltage**

* After adjusting the oscillator trimmer at 105 mc., check dial calibration by tuning the receiver to a 90 mc. signal from the generator. If the dial pointer indicates 90 mc., no further oscillator adjustments are necessary. If the pointer is on the high frequency side of 90 mc., slightly expand the length of the oscillator coil (L9); if the pointer is on the low frequency side of 90 mc., slightly compress the oscillator coil. Re-adjust the oscillator trimmer (C59) at 105 mc., and again check the calibration. Repeat this process until calibration is correct.

** After adjusting the trimmers at 98 mc., check tracking by tuning the receiver to a 90 mc. signal from the generator and re-adjusting the trimmers for max. voltage. If the "peak" setting is the same at 90 mc. as it was at 98 mc., no further adjustments are necessary. If the capacitance of either trimmer must be increased to obtain maximum output at 90 mc., slightly compress the coil across that trimmer (either L7 or L8); if the capacitance of either trimmer must be decreased to obtain maximum output at 90 mc., slightly expand the coil across that trimmer. Re-adjust the converter and R-F trimmers (C57 and C58) at 98 mc., and again check the tracking. Repeat this process until tracking is correct.

MODELS H-164, H-166, H-167, H-166A

WESTINGHOUSE ELECTRIC CORP.

PRE-AMPLIFIERS

A phonograph pre-amplifier is used in Models H-166, H-166A and H-167. Either of the pre-amplifier chassis shown below may be used. The chassis number is stamped on the chassis of all pre-amplifiers for identification.

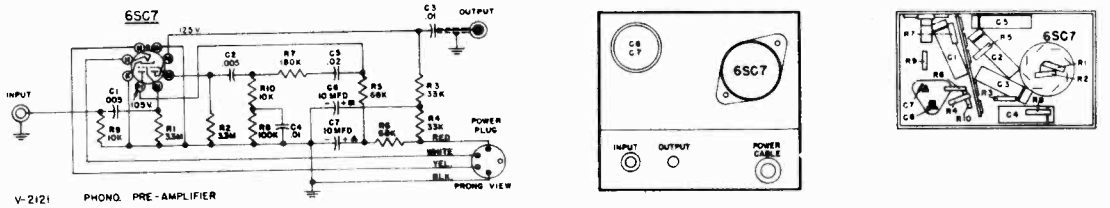


Fig. 6 - V-2121 PHONOGRAPH PRE-AMPLIFIER

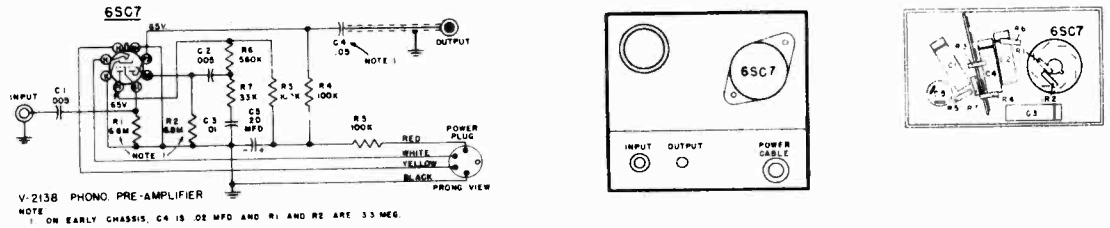
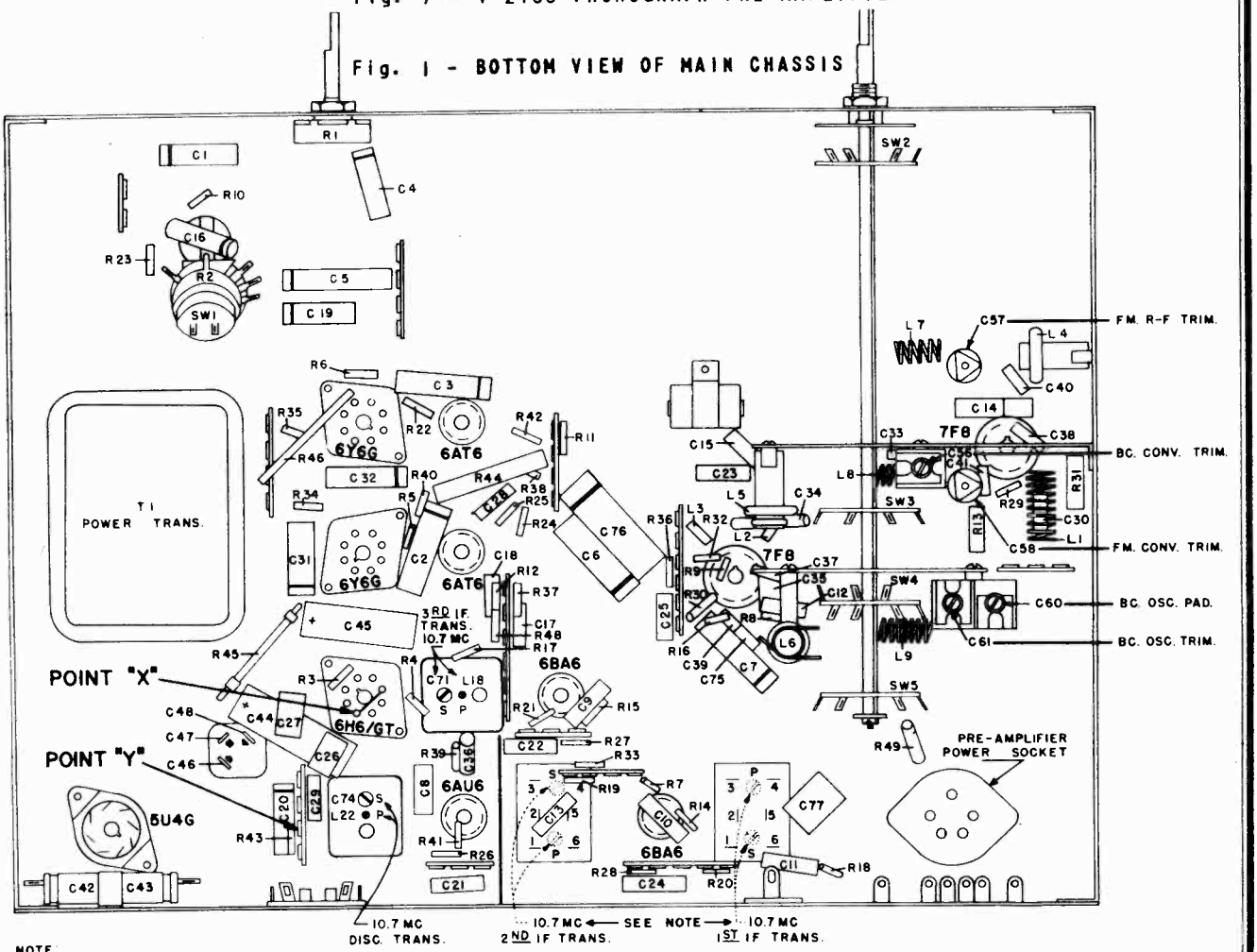


Fig. 7 - V-2138 PHONOGRAPH PRE-AMPLIFIER

Fig. 1 - BOTTOM VIEW OF MAIN CHASSIS



NOTE:
1. A FEW EARLY MODELS (CHASSIS V-2119) HAD 1ST AND 2ND IF TRANSFORMER ADJUSTMENTS AS SHOWN BY DOTTED LINE.

WESTINGHOUSE ELECTRIC CORP. MODELS H-164, H-166, H-167, H-166A

MAIN CHASSIS AND CABINET LIST

Part No.	Description of Part	List price Each
	40 mfd 400 v. (C47) 16 mfd 350 v. (C48)	
V-4750	Capacitor, variable 3 gang (with brackets) (C49, C50, C51, C52, C53, C54)	
V-4746	Capacitor, trimmer, B.C. antenna (C55)	
V-4747	Capacitor, trimmer, B.C. converter (56)	
V-4748	Capacitor, trimmer, F.M. antenna (C57, C58, C59)	
V-4749	Capacitor, 2 gang B.C. oscillator padder (C60) B.C. oscillator trimmer (C61)	
R2CC21UJ100F	Capacitor, fixed ceramic 10 mmf (C75)	
V-5442-1	Capacitor, resonant type .1 mfd 400 v. (C76)	
V-5040-15	Capacitor, .01 mfd 600 v. (C77)	
V-4898	Catch, bullet, blonde (H-166, H-167)	
V-5064-1	Catch, bullet, cordovan (H-167)	
V-5312	Choke Assembly Antenna input, F.M. (L1) R2CC21CH150J Capacitor, ceramic 15 mmf (C30)	
V-4886	Choke, filament (L2, L3)	
V-4763	Clamp, dial	
V-4193S	Clamp, dial drive	
V-4785	Clamp, dial moulding	
V-3337S	Clamp, power cord, for pre-amplifier (H-166, H-167)	
V-4764	Clip, spring, dial mounting	
V-4751	Coil, B.C. antenna (L4)	
V-4752	Coil, B.C. converter (L5)	
V-4753	Coil, B.C. oscillator (L6)	
V-5048	Coil, F.M. R-F (L7)	
V-4755	Coil, F.M. converter	
V-4756	Coil, F.M. oscillator (L9)	
V-4784-2	Cone and voice coil assembly, for V-4784 speaker stamped 252	
V-4784-4	Cone and voice coil assembly, for V-4784 speaker stamped 189	
V-4784-6	Cone and voice coil assembly, for V-4784 speaker stamped 285	
V-3254S	Connector, phono	
V-3305	Control, tone, 1 megohm (R1)	
V-3293	Control, volume, 2 megohms (R2) with switch (SW1)	
V-4304S	Cord, dial drive, with clamp	
V-3239	Cord, power A-C	
V-4966-1	Cord, record changer, A-C power (H-166, H-167)	
V-4525-2	Cushion, chassis mounting	
V-4690	Decal, band	
V-4691	Decal, tone	
V-4765	Dial, glass	
V-4902	Glide, furniture	
V-5298-5	Grille Cloth Assembly, record storage, cordovan (H-167)	
V-4934	Grille Cloth Assembly, record storage (H-166)	
V-5298-1	Grille Cloth Assembly, record storage, blonde (H-167)	
V-5298-3	Grille cloth assembly, record storage, silver walnut (H-167)	
V-5298-6	Grille cloth assembly, speaker, cordovan (H-167)	
V-4954	Grille cloth assembly, speaker (H-166)	
V-5298-2	Grille cloth assembly, speaker, blonde (H-167)	
V-5298-4	Grille cloth assembly, speaker, silver walnut (H-167)	
V-4778-1	Grille cloth assembly, speaker (H-164)	
V-3345S-5	Grommet, rubber	
V-3345-10	Grommet, socket mounting	
V-3345S-4	Grommet, variable capacitor mounting	
V-5358-1	Hinge, upper L.H. (H-166)	
V-5359-1	Hinge, upper R.H. (H-166)	
V-5066-1	Hinge, upper L.H. blonde (H-167)	
V-5066-2	Hinge, upper R.H. blonde (H-167)	
V-5066-5	Hinge, upper L.H. cordovan (H-167)	
V-5066-6	Hinge, upper R.H. cordovan (H-167)	
V-4697S-2	Knob, band switch, cordovan (H-166, H-167) and mahogany (H-164)	
V-4697S-4	Knob, band switch, blonde and silver walnut (H-167)	
V-5316	Knob, door (H-166)	
V-4910	Knob, door, lower, blonde and silver walnut (H-167)	
V-5301	Knob, door, upper, blonde and silver walnut (H-167)	
V-4697S-3	Knob, tone, blonde and silver walnut (H-167)	
V-4697S-1	Knob, tone, mahogany and cordovan	
V-4888S-2	Knob, volume and tuning, blonde and silver walnut (H-167)	
V-4888S-1	Knob, volume and tuning, mahogany and cordovan	
No. 44	Lamp, pilot	
V-3283-3	Loop, B.C. (L25)	
V-4781	Moulding dial	
V-4786	Moulding, dial	
V-4696	Nameplate, Westinghouse-FM	
V-3926	Nut, speed, FM-nameplate mounting	
V-4783-1	Plate, front glass, mahogany (H-164, H-166), walnut (H-164) and cordovan (H-167)	
V-4783-2	Plate, front glass, blonde and silver walnut (H-167)	
V-3399	Pointer assembly	
V-4967	Pull, drawer (H-166)	
V-3166S	Pulley, 7/16 dia.	
V-3181	Rail, pointer	
RC20AE153J	Resistor, 15,000 ohms ½ w. (R3, R4)	
RC20AE101M	Resistor, 100 ohms ½ w. (R5, R6)	
RC20AE153K	Resistor, 15,000 ohms ½ w. (R7)	

MODELS H-164, H-166, H-167, H-166A WESTINGHOUSE ELECTRIC CORP.

MAIN CHASSIS AND CABINET PARTS LIST

Part No.	Description of Part
RC20AE471K	Resistor, 470 ohms ½ w. (R8)
RC20AE223K	Resistor, 22,000 ohms ½ w. (R9)
RC20AE273K	Resistor, 27,000 ohms ½ w. (R10)
RC20AE224M	Resistor, 220,000 ohms ½ w. (R11, R12)
RC30AE682K	Resistor, 6800 ohms 1 w. (R13, R31)
RC20AE680K	Resistor, 68 ohms ½ w. (R14, R21)
RC20AE333K	Resistor, 33,000 ohms ½ w. (R15, R16)
RC20AE474M	Resistor, 470,000 ohms ½ w. (R17, R18, R19, R20, R48)
RC20AE274K	Resistor, 270,000 ohms ½ w. (R22, R23)
RC20AE105M	Resistor, 1.0 megohms ½ w. (R24)
RC20AE156M	Resistor, 15 megohms ½ w. (R25)
RC20AE332M	Resistor, 3300 ohms ½ w. (R26, R27, R28)
RC20AE121K	Resistor, 120 ohms ½ w. (R29)
RC30AE103M	Resistor, 10,000 ohms 1 w. (R30)
RC20AE225M	Resistor, 2.2 megohms ½ w. (R32, R33)
RC20AE330M	Resistor, 33 ohms ½ w. (R34, R35, R49)
RC20AE475M	Resistor, 4.7 megohms ½ w. (R36)
RC20AE473M	Resistor, 47,000 ohms ½ w. (R37)
RC20AE104K	Resistor, 100,000 ohms ½ w. (R38, R39)
RC20AE224K	Resistor, 220,000 ohms ½ w. (R40, R41)
RC20AE154M	Resistor, 150,000 ohms ½ w. (R42)
RC20AE683M	Resistor, 68,000 ohms ½ w. (R43)
RC41AE272K	Resistor, 2700 ohms 2 w. (R44)
V-4758	Resistor, 110 ohms 3 w. (R45)
V-4759	Resistor, 7500 ohms 5 w. (R46)
V-3429S-9	Screw, #10-32 chassis mounting
V-3806S-5	Screw, speaker mounting
V-3164	Shaft, tuning
V-5595	Shield, plate
V-4168	Shield, tube socket
V-3344S-2	Sleeve, spacer, variable capacitor mounting
V-3353-3	Slide mechanism, left hand
V-3353-4	Slide mechanism, right hand
V-3252-2	Socket, pilot light (10-3/4" lead)
V-3252-4	Socket, pilot light (8½" lead)
V-3162S	Socket, 5 contact
V-3288S	Socket, 6 contact
V-4832-1	Socket, lock-in tube
V-4292S-1	Socket, miniature molded
V-3275S	Socket, molded octal tube
V-3246S	Socket, octal tube
V-3393-2	Socket, phono, A-C power
V-4784	Speaker, 12" Electro-dynamic
V-3258S	Spring, knobs
V-3248S	Spring, dial drive
V-3740S-1	Strap, ground flexible
V-4900	Strike, bullet catch, mahogany (H-166) and blonde and silver walnut (H-167)
V-5065-1	Strike, bullet catch, cordovan (H-167)
V-3167S-1	Stud, pulley, threaded
V-3430	Support, volume control shaft
V-4760	Switch, selector (SW2, SW3, SW4, SW5)
V-4771	Terminal board, ANT.-GND.
V-3417	Terminal board, FM antenna
V-4784-1	Transformer, output for V-4784 speaker stamped 252
V-4784-3	Transformer, output for V-4784 speaker stamped 189
V-4784-5	Transformer, output for V-4784 speaker stamped 285
V-5367	Transformer, 1st I-F (V-2119-1 chassis only) (C62, C63, C64 C65, C66, L10, L11, L12, L13, R47)
V-4621	Transformer, 1st I-F (V-2119 chassis only) (C62, C63, C64, C65, C66, L10, L11, L12, L13, R47
V-5368	Transformer, 2nd I-F (V-2119-1 chassis only) (C67, C68, C69, C70, L14, L15, L16, L17)
V-4622	Transformer, 2nd I-F (V-2119 chassis only (C67, C68, C69, C70, L14, L15, L16, L17)
V-4623	Transformer, 3rd I-F (C71, C72, L18, L19, L20, L21)
V-4624	Transformer, discriminator (C73, C74, L22, L23, L24)
V-4761	Transformer, power (T1)
V-3295	Transformer, power (T1) (used on *some* V-2119 chassis)
V-3274S	Tube holder
V-3506S-1	Washer, chassis mounting, Neoprene
V-5055	Washer, capacitor trimmer, Phenolic
V-3668S	Washer, felt (knobs)
V-3267S-3	Washer, flat, chassis mounting
V-3267S-10	Washer, flat, 1" dia.
V-3267S-1	Washer, front glass plate mounting

PARTS FOR V-5699 RECORD CHANGER

(Used in Model H-166A —

When ordering replacement parts for the V-5699 record changer, order these parts rather than the parts shown under these Loc. numbers in the V-4944 Record Changer Service Notes.

Loc.	Part No.	Description
9	V-7342	Cable, pickup
10	V-7341	Pickup arm assembly ... Pickup, magnetic (13) Cable, pickup (9) Arm, pickup (10) Strengthener, pickup arm (3) Screws
10	V-4976	Arm, pickup
13	V-7017	Pickup, magnetic (with mtg. screws)

PARTS LIST FOR MODELS H-164, H-166, H-166A AND H-167

When ordering parts, specify model number of set in addition to part number and description of part.

V-2121 PHONO PRE-AMPLIFIER PARTS LIST

Part No.	Description of Part
V-4931	Cable, output
V-4930	Cable, power
RCP10W6502A	Capacitor, .005 mfd 600 v. (C1, C2)
RCP10W4103A	Capacitor, .01 mfd 400 v. (C3, C4)
RCP10W4203A	Capacitor, .02 mfd 400 v. (C5)
V-4928	Capacitor, dry electrolytic, dual 10 mfd 450 v. (C6, C7)
V-3254S	Connector, phono
V-3345S-5	Grommet, power cord
V-3345S-10	Grommet, socket mounting
RC20AE335M	Resistor, 3.3 megohms ½ w. (R1, R2)
RC20AE333K	Resistor, 33,000 ohms ½ w. (R3, R4)
RC20AE683K	Resistor, 68,000 ohms ½ w. (R5, R6)
RC20AE184K	Resistor, 180,000 ohms ½ w. (R7)
RC20AE104K	Resistor, 100,000 ohms ½ w. (R8)
RC20AE103M	Resistor, 10,000 ohms ½ w. (R9)
RC20AE103K	Resistor, 10,000 ohms ½ w. (R10)
V-4933	Socket, molded octal

V-2138 PHONO PRE-AMPLIFIER PARTS LIST

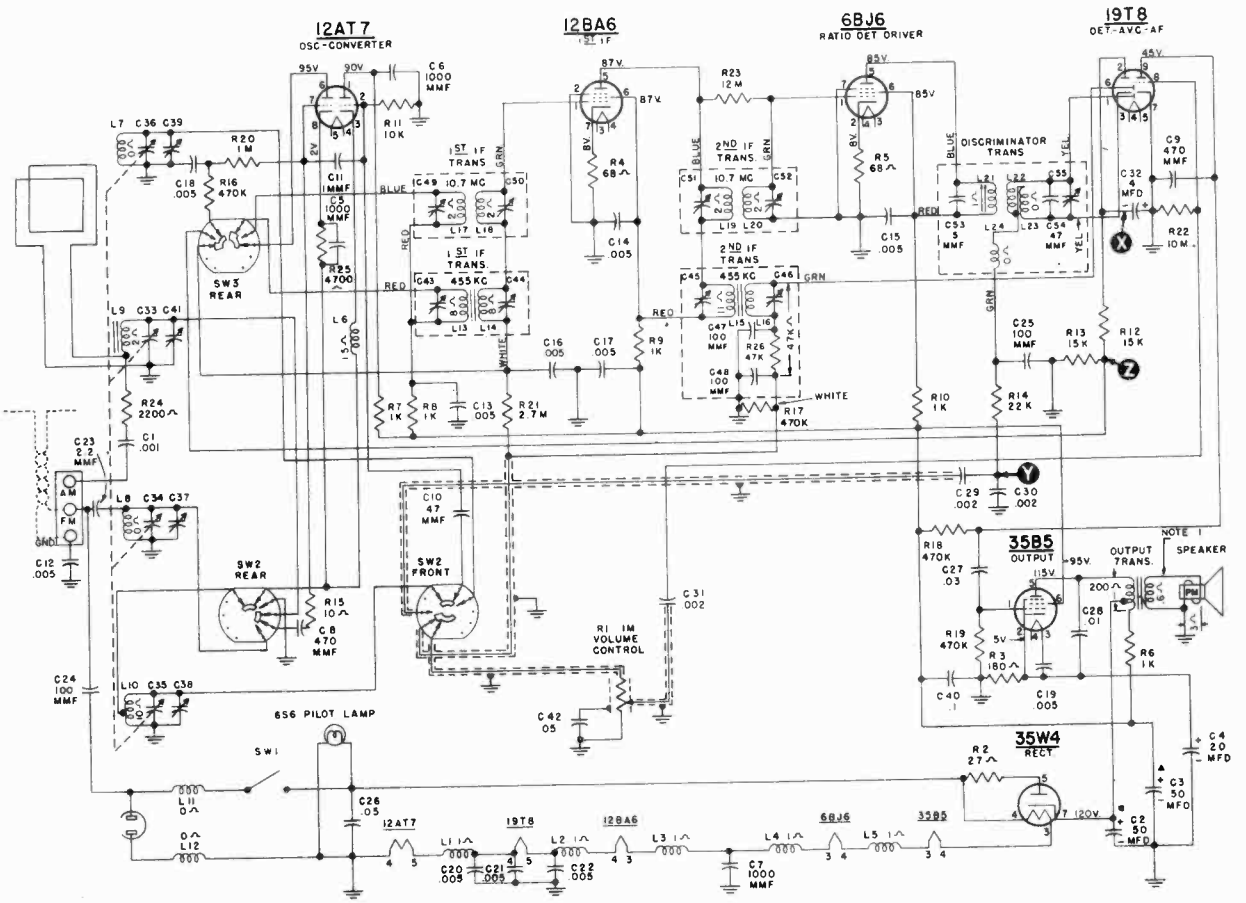
V-4931	Cable, output
V-4930	Cable, power
RCP10W6502A	Capacitor, .005 mfd 600 v. (C1, C2)
RCP10W4103A	Capacitor, .01 mfd 400 v. (C3)
RCP10W4503A	Capacitor, .05 mfd 400 v. (C4)
V-5765	Capacitor, dry electrolytic, 20 mfd 300 v. (C5)
V-3254S	Connector, phono
V-3345S-5	Grommet, power cord
V-3345S-10	Grommet, socket mounting
RC20AE685M	Resistor, 6.8 megohms ½ w. (R1, R2)
RC20AE104M	Resistor, 100,000 ohms ½ w. (R3, R4, R5)
RC20AE564K	Resistor, 560,000 ohms ½ w. (R6)
RC20AE333M	Resistor, 33,000 ohms ½ w. (R7)
V-4933	Socket, molded octal

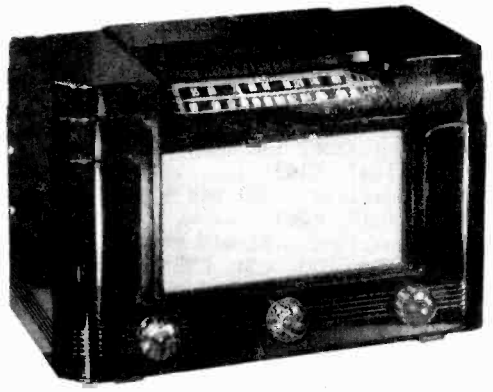
MAIN CHASSIS AND CABINET PARTS LIST

V-4777-2	Antenna Assembly, FM dipole (H-166, H-167)
V-4777-1	Antenna Assembly, FM dipole (built-in H-164)
V-4762	Background, felt
V-4745	Bracket Assembly, dial background
V-3409	Bracket and Stud Assembly, dial background
V-3415	Bracket and Tuning Shaft Assembly
V-3672	Bracket, capacitor mounting (front)
V-3671	Bracket, capacitor mounting (rear)
V-3185	Bracket, dial light
V-3357	Bracket, dial light (large)
V-3374	Bracket, volume control mounting
V-4965-1	Cable, record changer to pre-amp., phono (H-166, H-167)
RCP10W4103A	Capacitor, .01 mfd 400 v. (C1)
RCP10M4103A	Capacitor, .01 mfd 400 v. (C2, C3)
RCP10W6502A	Capacitor, .005 mfd 600 v. (C4)
RCP10W4503A	Capacitor, .05 mfd 400 v. (C5, C6, C7)
RCM30B512M	Capacitor, .005 mfd mica (C8, C9, C10, C11, C12, C13)
RCM30C272G	Capacitor, 2700 mmf mica (C14, C15)
RCP10W6202M	Capacitor, .002 mfd 600 v. (C16)
RCM20B101M	Capacitor, 100 mmf mica (C17, C18)
RCP10W6102K	Capacitor, .001 mfd 600 v. (C19, C20)
RCM30B103M	Capacitor, .01 mfd mica (C21, C22, C23, C24, C25)
RCM20B271J	Capacitor, 270 mmf mica (C26, C27)
RCM20B221M	Capacitor, 220 mmf mica (C28, C29)
RCP10M6202M	Capacitor, .002 mfd 600 v. (C31, C32)
R2CC21CH050D	Capacitor, fixed ceramic 5 mmf (C33)
R2CC36SL221M	Capacitor, fixed ceramic 220 mmf (C34)
R2CC21PJ220K	Capacitor, fixed ceramic 22 mmf (C35)
R2CC26PJ470K	Capacitor, fixed ceramic 47 mmf (C36, C37, C38)
R5CC21ZY471M	Capacitor, fixed ceramic 470 mmf (C39, C40, C41)
V-3241	Capacitor, dual line filter .05-.05 mfd 600 v. (C42, C43)
V-4880	Capacitor, electrolytic 2.0 mfd 50 v. (C44)
V-3236	Capacitor, electrolytic cartridge, 20 mfd 25 v. (C45)
V-3302	Capacitor, electrolytic 40 mfd 450 v. (C46)

MODEL H-182

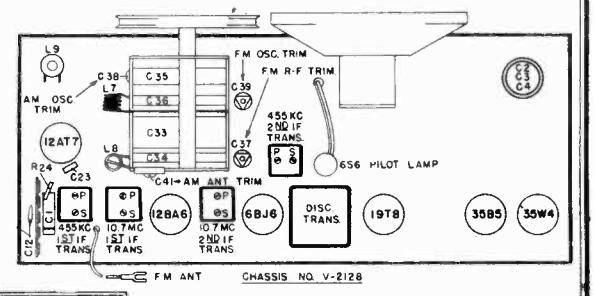
WESTINGHOUSE ELECTRIC CORP.





NOTE
1. VOICE COIL DISCONNECTED.
2. SELECTOR SWITCH SW2 AND SW3 IS SHOWN IN EXTREME COUNTER-CLOCKWISE POSITION OR AM BAND. SECOND POSITION CLOCKWISE IS FM BAND.
3. ALL VOLTAGES MEASURED FROM CHASSIS (GND) USING 20,000 OHMS/VOLT METER — LINE VOLTAGE 117 VAC READINGS SHOULD BE AS SHOWN ± 20 %.
4. THE RATINGS OF SOME COMPONENTS USED IN PRODUCTION MAY VARY SLIGHTLY FROM THOSE SHOWN ABOVE.

CHASSIS NO. V-2128



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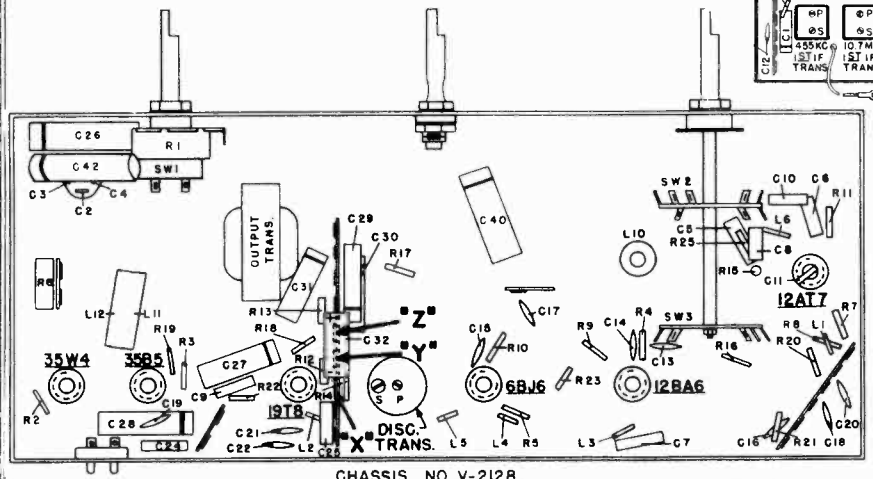

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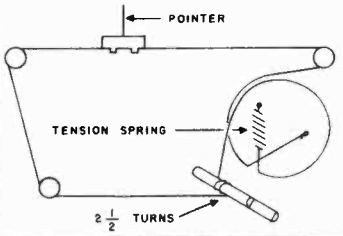


WESTINGHOUSE ELECTRIC CORP. MODEL H-182

ALIGNMENT

BROADCAST BAND

Connect an output meter across the speaker voice coil

While making the following adjustments, keep the volume control set for maximum output and the signal generator output attenuated to avoid AVC action.

Step	Connect Signal Generator to —	Signal Generator Frequency	Radio Dial Setting	Adjust
1.	Set Band Switch to AM			
2.	Pin #1 of 12BA6 tube through a 0.1 mfd capacitor	455 kc	1615 kc	Pri. and sec. of 455 kc 2nd I-F trans. for max. output
3.	Stator of tuning capacitor (C33) through a 0.1 mfd capacitor	455 kc	1615 kc	Pri. and sec. of 455 kc 1st I-F trans. for max. output
4.	Radiated signal (no actual connection)	1400 kc	1400 kc	AM osc. trimmer for max. output
5.	Radiated signal (no actual connection)	1400 kc	1400 kc	AM ant. trimmer for max. output (rock in adjustment)
6.	Recheck steps 4 and 5			

FM BAND

Do not align 10.7 mc I-F circuits until all 455 kc I-F adjustments have been completed.

1.	Set Band Switch to FM			
2.	Connect a VTVM between point "X" and ground. (See Figs. 1 and 3.)			
3.	Pin #1 of 12BA6 tube through a .002 mfd mica capacitor	UNMODULATED 10.7 mc	108 mc	Discriminator trans. primary and 10.7 mc. 2nd I-F trans. pri. and sec. for max. voltage.
4.	Reconnect VTVM between points "Y" and "Z". (See Figs. 1 and 3.)			
5.	Pin #1 of 12BA6 tube through a .002 mfd mica capacitor	UNMODULATED 10.7 mc	108 mc	Discriminator trans. secondary for *zero* voltage. The voltage will change polarity as the trimmer is tuned through resonance — tune carefully for zero.
6.	Reconnect VTVM between point "X" and ground.			
7.	Pin #1 of 12BA6 tube through a .002 mfd mica capacitor	UNMODULATED 10.7 mc	108 mc	Discriminator trans. primary and 10.7 mc. 2nd I-F trans. pri. and sec. for max. voltage.
8.	Place a temporary short across C34 (FM R-F tuning capacitor).			
9.	Pin #7 of 12AT7 tube through a .002 mfd mica capacitor	UNMODULATED 10.7 mc	108 mc	Pri. and sec. of 10.7 mc 1st I-F trans. for max. output
10.	Remove short from C34.			
11.	FM ant. terminals through a 300 ohm non-inductive resistor	UNMODULATED 108 mc	108 mc	FM osc. trimmer for max. output
12.	FM ant. terminals through a 300 ohm non-inductive resistor	UNMODULATED 98 mc	98 mc	FM R-F trimmer for max. output (rock in adjustment).
13.	Place a dab of thermal cement on the FM osc. and R-F trimmers to lock adjustment.			

TUBE COMPLEMENT:

1 12AT7 ..... Osc.-Converter
1 12BA6 ..... I-F Amp.
1 6BJ6 ..... Ratio Det. Driver (FM)
1 19T8 ..... Det., AVC, A-F Amp.
1 35B5 ..... Output Amp.
1 35W4 ..... Rectifier

OPERATING VOLTAGE:

105 to 120 volts 50-60 cycles A-C or 105 to 120 volts D-C.

POWER CONSUMPTION: ..... 30 watts

MODEL H-182

WESTINGHOUSE ELECTRIC CORP.

Part No.	Description
V-5608	Background, dial .....
V-5528-1 ..	Baffle and Grille Cloth Assembly .....
V-5607	Bracket Assembly, dial background .....
V-5600	Bracket, cover, back .....
V-5599	Bracket, dial .....
V-5527	Bushing, insulator, control
V-5437S-1 ..	Button, plug .....
V-1153-2 ..	Cabinet, plastic, brown ...
V-1153-1 ..	Cabinet, plastic, ivory ...
RCP10M6102M	Capacitor, .001 mfd 600 v. (C1)
V-5493	Capacitor, dry electrolytic, 50 mfd 150 v. (C2) ..... 50 mfd 150 v. (C3) 20 mfd 25 v. (C4)
R5CC26ZY102M	Capacitor, ceramicon, 1000 mmf (C5, C6, C7) .....
R5CC21ZY471M	Capacitor, ceramicon, 470 mmfd (C8, C9) .....
R1CC21SL470K	Capacitor, ceramicon, 47 mmf (C10) .....
V-5658-1 ..	Capacitor, 1 mmf (C11) ....
V-5596	Capacitor, Hi-Kap .005 mfd (C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22)
V-5658-2 ...	Capacitor, 2.2 mmfd (C23) .
RCM20A101K .	Capacitor, mica, 100 mmf (C24, C25) .....
RCP10M6503M	Capacitor, .05 mfd 600 v. (C26) .....
RCP10M4303M	Capacitor, .03 mfd 400 v. (C27)
RCP10M6103M	Capacitor, .01 mfd 600 v. (C28)
RCP10M6202M	Capacitor, .002 mfd 600 v. (C29, C30, C31) .....
V-4637	Capacitor, electrolytic 4 mfd 50 v. (C32) .....
V-5494	Capacitor, variable, 2 gang (C33, C34, C35, C36, C37, C38, C39) .....
RCP10M4104M	Capacitor, 0.1 mfd 400 v. (C40)
V-4992	Capacitor, trimmer (C41) .
RCP10M4503M	Capacitor, .05 mfd 400 v. (C42)
V-4638	Choke, filament (L1, L2, L3, L4, L5) .....
V-4193S-1 ..	Clamp, dial cord .....
V-4886	Coil, filament (L6) .....
V-5545	Coil, oscillator, FM (L7) .
V-5546	Coil, RF, FM (L8) .....
V-5605	Coil, antenna loading (L9)
V-5514	Coil, oscillator, AM (L10)
V-5743	Coil, choke, antenna (L11, L12)
V-5517	Control, volume, 1.0 megohm (R1) and switch (SW1)
V-4304-14 ..	Cord Assembly, dial drive
V-5522	Cord, power, A-C (including socket) .....
V-5610-1 ..	Cover Assembly, back for brown cabinet (including loop, hinge, terminals, cord and socket)
V-5610-2 ..	Cover Assembly, back for ivory cabinet (including loop, hinge, terminals, cord and socket
V-5523	Dial .....
V-4236	Gasket, felt, speaker .....

Part No.	Description
V-5602-1 ..	Hinge, cover, for brown cabinet .....
V-5602-2 ..	Hinge, cover, for ivory cabinet .....
V-5603	Insulator, retainer for power cord .....
V-5560-1 ..	Knob, FM-AM .....
V-5558-1 ..	Knob, tuning .....
V-5559-1 ..	Knob, volume .....
No. 6S6 ...	Lamp, pilot light .....
V-5638	Loop Assembly, antenna .....
V-3891	Nut, speed, baffle mounting
V-5721S ...	Palnut, 3/8-32 .....
V-5549	Plug, power cord (mounted on chassis) .....
V-4213	Pointer, dial .....
V-4187	Pulley .....
RC20AE270K .	Resistor, 27 ohms ½ w. (R2)
RC20AE181J .	Resistor, 180 ohms ½ w. (R3)
RC20AE680J .	Resistor, 68 ohms ½ w. (R4, R5)
RC40AE102M .	Resistor, 1000 ohms 2 w. (R6)
RC20AE102M .	Resistor, 1000 ohms ½ w. (R7, R8, R9, R10) .....
RC20AE103K .	Resistor, 10,000 ohms ½ w. (R11)
RC20AE153J .	Resistor, 15,000 ohms ½ w. (R12, R13) .....
RC20AE223M .	Resistor, 22,000 ohms ½ w. (R14)
RC20AE100K .	Resistor, 10 ohms ½ w. (R15)
RC20AE474M .	Resistor, 470,000 ohms ½ w. (R16, R17, R18, R19) .....
RC20AE105M .	Resistor, 1 megohm ½ w. (R20)
RC20AE275M .	Resistor, 2.7 megohms ½ w. (R21)
RC20AE106M .	Resistor, 10 megohms ½ w. (R22)
RC20AE126K .	Resistor, 12 megohms ½ w. (R23)
RC20AE222K .	Resistor, 2200 ohms ½ w. (R24)
RC20AE472K .	Resistor, 4700 ohms ½ w. (R25)
V-5050S-101	Screw #10-32, chassis mounting
V-5530	Shaft Assembly, dial drive
V-3344-2 ..	Sleeve, spacer, variable capacitor mounting .....
V-4292S-1 .	Socket, miniature molded, 7 prong .....
V-5556-1 ..	Socket, miniature molded, 9 prong .....
V-4989	Socket, pilot light .....
V-5533	Speaker, 5" P.M. .....
V-3248S	Spring, dial drive .....
V-5534	Switch, selector (SW2, SW3)
V-5587	Teenut .....
V-4684	Terminal Board, ANT-GND ....
V-5537	Transformer, output .....
V-5535	Transformer, 1st I-F, AM (C43, C44, L13, L14) .....
V-5539	Transformer, 2nd I-F, AM (C45, C46, C47, C48, L15, L16, R26) .....
V-5540	Transformer, 1st I-F, FM (C49, C50, L17, L18) ....
V-5540	Transformer, 2nd I-F, FM (C51, C52, L19, L20) .....
V-5538	Transformer, discriminator (C53, C54, C55, L21, L22, L23, L24) .....
V-5606-1 ..	Washer, felt, for knobs ....
V-5526	Washer, insulator, for controls

CAUTION: One side of the power line is connected directly to the chassis in this model. Care must be exercised to avoid contacting the radio chassis and ground at the same time — *serious shock may result.* When making repairs or adjustments to the radio, it is recommended that the chassis be isolated from the power line by means of an isolation transformer.

WESTINGHOUSE ELECTRIC CORP. MODELS H-185, H-195

H-185

H-195

SPECIFICATIONS

FREQUENCY RANGE: ..... 540 to 1600 kc.

INTERMEDIATE FREQUENCY: ..... 455 kc.

TUBE COMPLEMENT:

1	1R5	Converter
1	1T4	I-F Amp.
1	1U5	Det., AVC and 1st A-F Amp.
1	3S4	Power Output Amp.

POWER OUTPUT:

Maximum (line):	.175 watt
Maximum (battery):	.15 watt
Undistorted (line):	.08 watt
Undistorted (battery):	.02 watt

LOUDSPEAKER: ..... 4" P.M.

POWER SUPPLY:

Battery Operation:
1 Westinghouse V-5009 "B" battery (67½ v.)
5 Westinghouse V-5696-1 "A" batteries (1½ v. each)

LINE OPERATION:

105 to 120 volts, 50 — 60 cycles A-C, or D-C

CURRENT CONSUMPTION (Battery Operation):

"A" Batteries	.05 amp.
"B" Battery	.01 amp.

POWER CONSUMPTION (Line Operation): 17 watts

ALIGNMENT

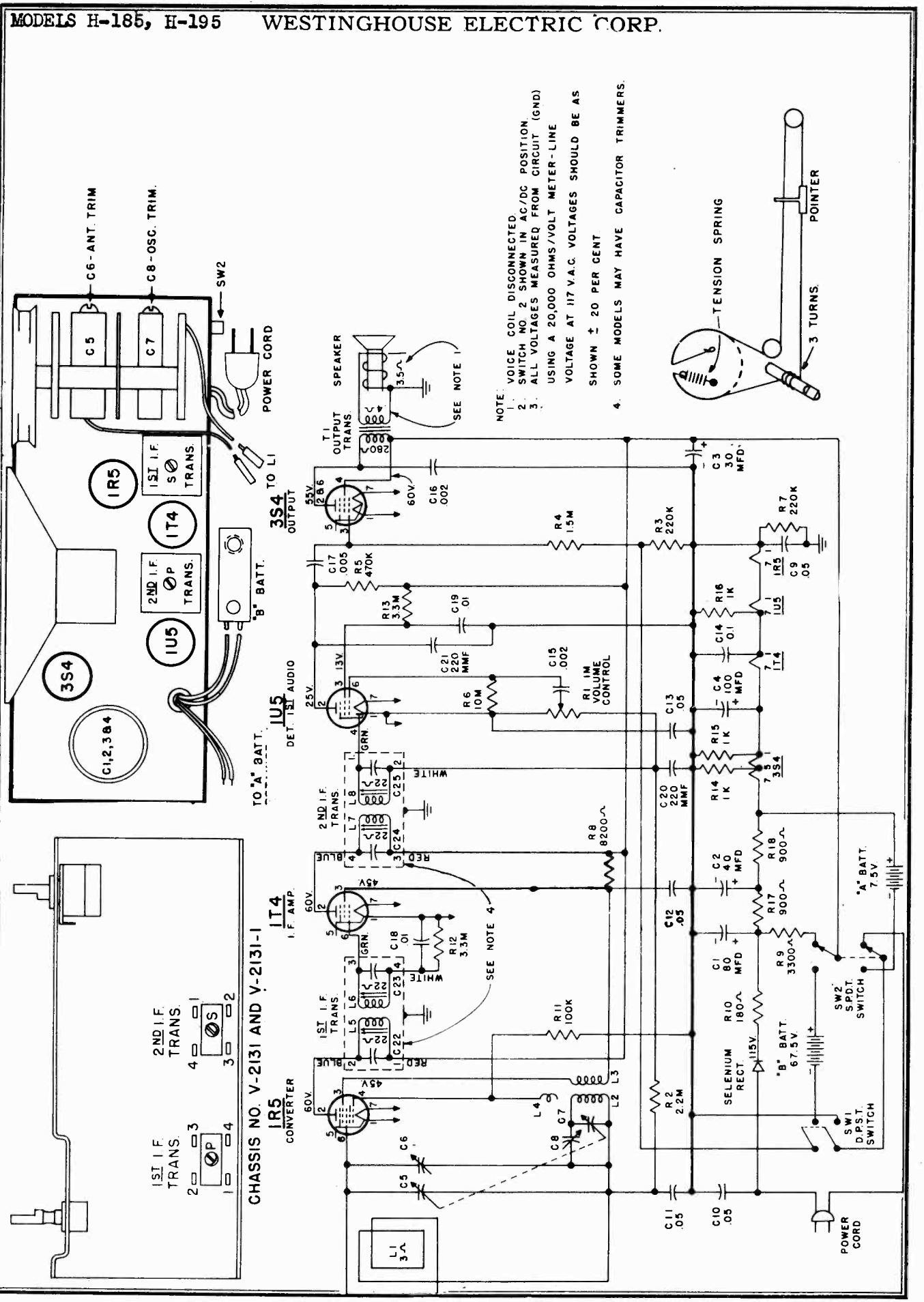
It is recommended that the chassis be isolated from the power line by means of an isolation transformer.

Make certain that the dial pointer is correctly orientated with respect to the dial scale.

While making the following adjustments, keep the volume control set for maximum output and the signal generator output attenuated to avoid AVC action.

Step	Connect Signal Generator to -	Signal Generator Frequency	Radio Dial	Adjust for Maximum Output
1	Stator of R-F tuning capacitor (C5) through a 200 mmf capacitor	455 kc	455 kc	Pri. and Sec. of 2nd I-F trans.
2	Stator of R-F tuning capacitor (C5) through a 200 mmf capacitor	455 kc	455 kc	Pri. and Sec. of 1st I-F trans.
3	Recheck steps 1 and 2			
4	Radiated Signal	1615 kc	1615 kc	Oscillator Trimmer (C8)
5	Radiated Signal	1400 kc	1400 kc	R-F Trimmer (C6)

MODELS H-185, H-195 WESTINGHOUSE ELECTRIC CORP.

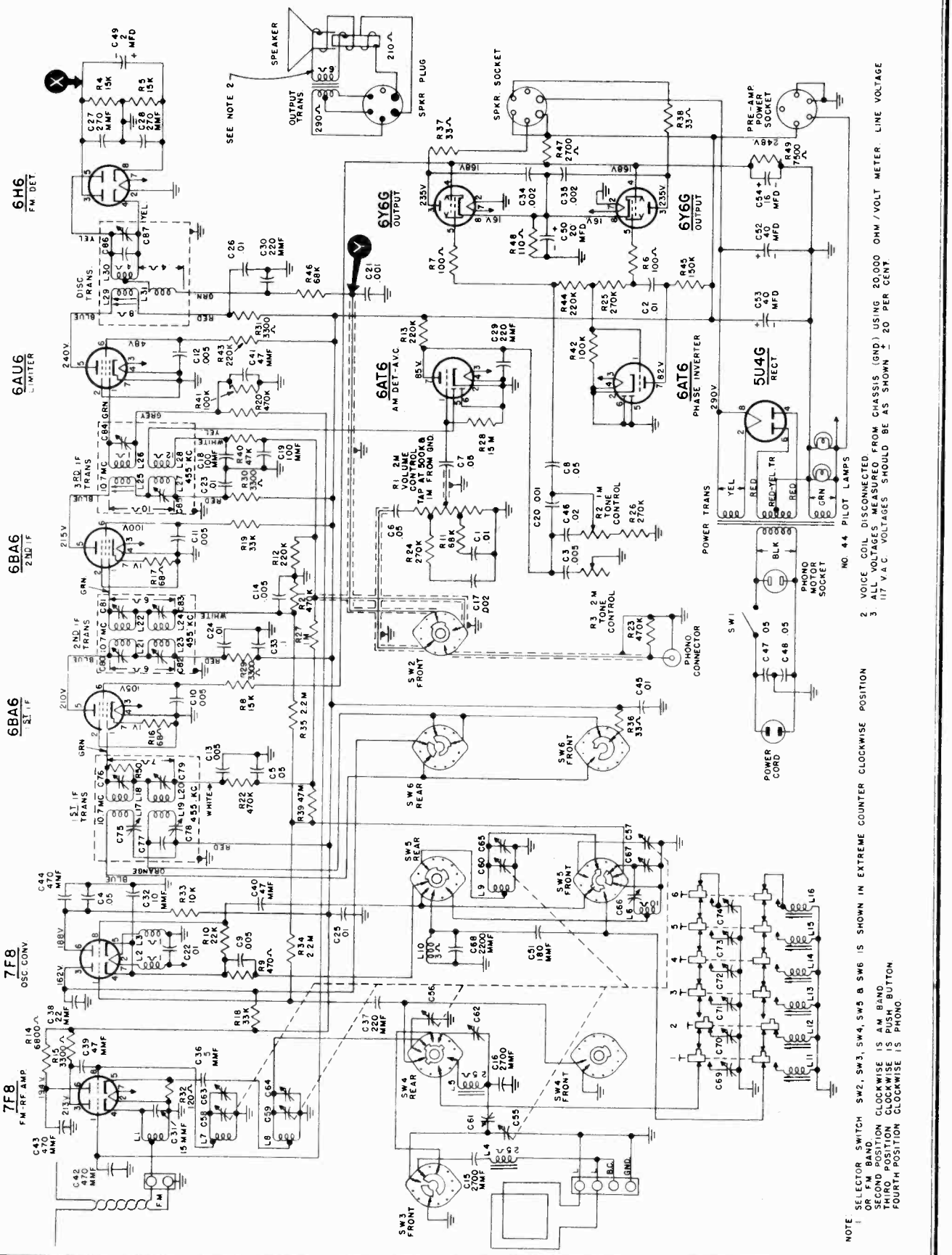


WESTINGHOUSE ELECTRIC CORP. MODELS H-185, H-195

Part No.	Description
V-5830-1	Handle (H-195 Blue)
V-5830-2	Handle (H-195 Brown)
V-5830-3	Handle (H-195 Ivory)
V-5698-1	Knob (H-185)
V-3667-2	Knob (H-195 Brown)
V-7779	Knob (H-195 Blue or Ivory)
V-5648	Lever, switch (V-2131) (H-185)
*V-5681-1	Loop, antenna (H-185) (L1)
*V-5681-2	Loop, antenna (H-195) (L1)
V-5650	Pointer
V-5398-1	Pulley, dial drive
V-4115	Rectifier, selenium
V-5659-2	Resistor, ballast
RC10AE225M	Resistor, 2.2 megohms ¼ w. (R2)
RC10AE221K	Resistor, 220 ohms ¼ w. (R3)
RC10AE155M	Resistor, 1.5 megohms ¼ w. (R4)
RC10AE474M	Resistor, 470K ¼ w. (R5)
RC10AE106M	Resistor, 10 megohms ¼ w. (R6)
RC10AE224M	Resistor, 220K ¼ w. (R7)
RC20AE822K	Resistor, 8200 ohms ½ w. (R8)
RC20AE332M	Resistor, 3300 ohms ½ w. (R9)
V-6067-1	Resistor, Glasohm 180 ohms 4 w. (R10)
RC10AE104M	Resistor, 100K ¼ w. (R11)
RC10AE335M	Resistor, 3.3 megohms ¼ w. (R12, R13)
RC10AE102K	Resistor, 1000 ohms ¼ w. (R14, R15, R16)
V-5689	Retainer, battery
V-5693	Retainer, spring
V-5702-1	Shaft, tuning (V-2131) (H-185)
V-5702-2	Shaft, tuning (V-2131-1) (H-195)
V-5764	Shelf, battery support
V-5670	Socket, miniature wafer, shielded
V-5673	Socket, miniature wafer, unshielded
*V-5654	Speaker, 4" PM
V-4057	Spring, dial drive
V-5687	Spring, hinge (H-185)
V-3258S	Spring, knob
V-5834	Spring, shelf retainer (H-195)
V-4651	Stud, trimount (H-185)
V-5406	Switch, battery, AC/DC
V-5663-2	Transformer, 1st and 2nd I-F (C22, C23, C24, C25, L5, L6, L7, L8)
V-5656	Transformer, output (T1)
V-5421-2	Washer, felt, for knobs

Part No.	Description
V-5652	Background, dial
V-5675-1	Baffle and Grille Cloth Assembly (H-185)
V-5825	Baffle, cardboard (H-195)
V-5696-1	Battery, "A"
V-5009	Battery, "B"
V-5826	Bracket, chassis mounting (H-195)
V-5827	Bracket, handle (H-195)
*V-1157-1	Cabinet, plastic (H-185)
*V-1159-1	Cabinet, leatherette (H-195 Blue)
*V-1159-2	Cabinet, leatherette (H-195 Brown)
*V-1159-3	Cabinet, leatherette (H-195 Ivory)
V-5662	Cable, "B" battery
V-5665	Capacitor, electrolytic (C1, C2, C3, C4)
V-5651	Capacitor, variable 2-gang (C5, C6, C7, C8)
V-5618-1	Capacitor, .05 mfd 400 v. (C9)
RCP10W4503A	Capacitor, .05 mfd 400 v. (C10)
RCP10W2503A	Capacitor, .05 mfd 200 v. (C11, C12, C13)
RCP10W2104A	Capacitor, 0.1 mfd 200 v. (C14)
RCP10W6202A	Capacitor, .002 mfd 600 v. (C15, C16)
RCP10W6502A	Capacitor, .005 mfd 600 v. (C17)
RCP10W4103A	Capacitor, .01 mfd 400 v. (C18, C19)
RCM20A221M	Capacitor, 220 mmf mica (C20, C21)
V-5828	Catch, back cover (H-195)
V-6009	Clamp, retainer spring
V-5684	Clip, back cover mounting (H-185)
V-5426	Clip, I-F mounting
V-5661	Coil, oscillator (L2, L3)
V-5688	Contact Assembly, "A" battery
V-5666-1	Control, volume (V-2131) (R1)
V-5666-2	Control, volume (V-2131-1) (R1)
V-4349-4	Cord, A-C power
V-4304-16	Cord Assembly, dial
V-5832-1	Dial (H-195)
V-5829-1	Eyelet, back cover opening (H-195)
V-3885	Foot, felt (H-195)
V-6026	Gasket, baffle (H-195)
V-5835	Grille (H-195)
V-5678-1	Handle (H-185)

MODELS H-186, H-187 WESTINGHOUSE ELECTRIC CORP.



RECORD CHANGER: V-M Model 400, RCD.CH. 15-1

H-186

H-187

ALIGNMENT

BROADCAST BAND—AMPLITUDE MODULATION

Connect an output meter across the speaker voice coil.

While making the following adjustments, keep the volume control set for maximum output, the tone control set on treble, and the signal generator output attenuated to avoid AVC action.

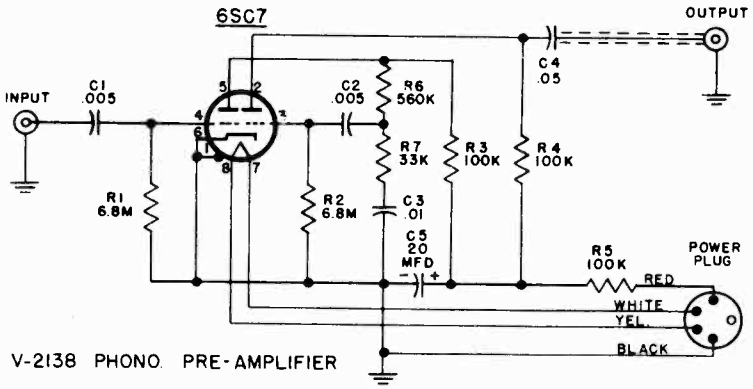
Step	*Connect Signal Generator to—*	*Signal Generator Frequency*	*Radio Dial Setting*	*Adjust for maximum output*
1	Set PHONO-BAND switch to "AM".			
2	Pin No. 1 of 6BA6, 2nd I-F, through a 0.1 mfd capacitor	455 kc	550 kc	455 kc primary trimmer of 3rd I-F trans.
3	Pin No. 1 of 6BA6, 1st I-F, through a 0.1 mfd capacitor	455 kc	550 kc	455 kc secondary and primary trimmers of 2nd I-F trans.
4	Pin No. 1 of 7F8, converter, through a 0.1 mfd capacitor	455 kc	550 kc	455 kc secondary and primary trimmers of 1st I-F trans.
5	Radiated signal (no actual connection)	1500 kc	1500 kc	Bc osc. trimmer (C67) (make certain that loop antenna is connected to "L" terminals).
6	Radiated signal (no actual connection)	1400 kc	1400 kc	Bc converter (C62) and BC antenna (C61) trimmers.
7	Radiated signal (no actual connection)	600 kc	600 kc	BC oscillator padder (C66) ("rock-in" adjustment).
8	Repeat Steps 5, 6 and 7			

MODELS H-186, H-187 WESTINGHOUSE ELECTRIC CORP.

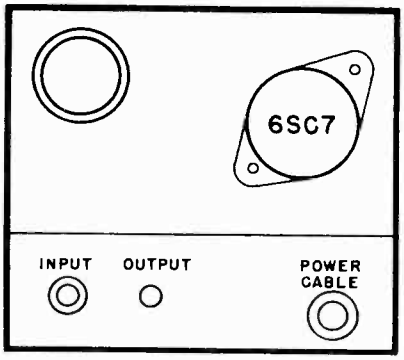
Step	Connect Signal Generator to—	Signal Generator Frequency	Radio Dial Setting	Adjust
1	Set PHONO-BAND switch to "FM".			
2	Connect a vacuum tube voltmeter between point "X" (see Figs. 2 and 3) and ground (chassis).			
3	Place a temporary short between rotor and stator of FM osc. section of tuning capacitor (C60).			
4	*Detune* 10.7 mc. secondary trimmers of 1st, 2nd, and 3rd I-F transformers and secondary trimmer of discriminator transformer by turning screws ¼ turn toward tight position.			
5	Stator of FM convertor tuning capacitor (C59) through a .001 mfd mica capacitor	Unmodulated 10.7 mc	88 mc	10.7 mc primary trimmers of discriminator, 3rd I-F, 2nd I-F, and 1st I-F transformers (in order given) for maximum voltage.
6	Stator of FM converter tuning capacitor (C59) through a .001 mfd mica capacitor	Unmodulated 10.7 mc	88 mc	10.7 mc secondary trimmers of 1st, 2nd, and 3rd I-F transformers for maximum voltage. NOTE: *Do not* re-peak the primary trimmers.
7	Connect the vacuum tube voltmeter between "Y" (Figs. 2 and 3) and chassis.			
8	Stator of FM converter tuning capacitor (C59) through a .001 mfd mica capacitor	Unmodulated 10.7 mc	88 mc	Secondary of discriminator trans. for zero voltage. The voltage will change polarity as the trimmer is tuned through resonance. Tune carefully for zero voltage.
9	Connect the vacuum tube voltmeter between point "X" and chassis.			
10	Remove the short from the FM oscillator tuning capacitor.			
11	FM. antenna terminal through a 72 ohm resistor	Unmodulated 105 mc	105 mc	FM oscillator trimmer (C65) for max. voltage.*
12	FM antenna terminal through a 72 ohm resistor	Unmodulated 98 mc	98 mc	FM converter (C64) and FM R-F (C63) trimmers for max. voltage.**

*After adjusting the oscillator trimmer at 105 mc., check dial calibration by tuning the receiver to a 90 mc. signal from the generator. If the dial pointer indicates 90 mc., no further oscillator adjustments are necessary. If the pointer is on the high frequency side of 90 mc., slightly expand the length of the oscillator coil (L9); if the pointer is on the low frequency side of 90 mc., slightly compress the oscillator coil. Re-adjust the oscillator trimmer (C65) at 105 mc., and again check the calibration. Repeat this process until calibration is correct.

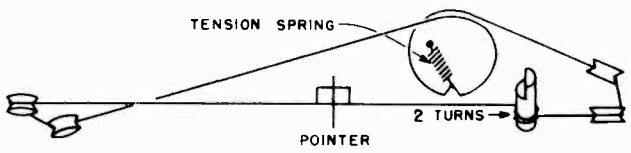
**After adjusting the trimmers at 98 mc., check tracking by tuning the receiver to a 90 mc. signal from the generator and re-adjusting the trimmers for max. voltage. If the "peak" setting is the same at 90 mc. as it was at 98 mc., no further adjustments are necessary. If the capacitance of either trimmer must be increased to obtain maximum output at 90 mc., slightly compress the coil across that trimmer (either L7 or L8); if the capacitance of either trimmer must be decreased to obtain maximum output at 90 mc., slightly expand the coil across that trimmer. Re-adjust the converter and R-F trimmers (C63 and C64) at 98 mc., and again check the tracking. Repeat this process until tracking is correct.



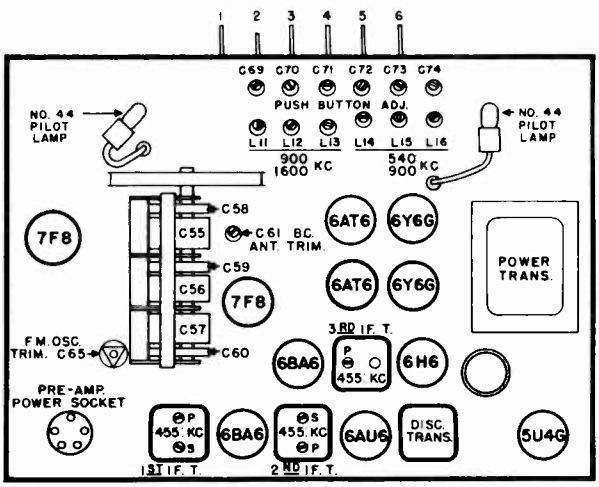
V-2138 PHONO. PRE-AMPLIFIER

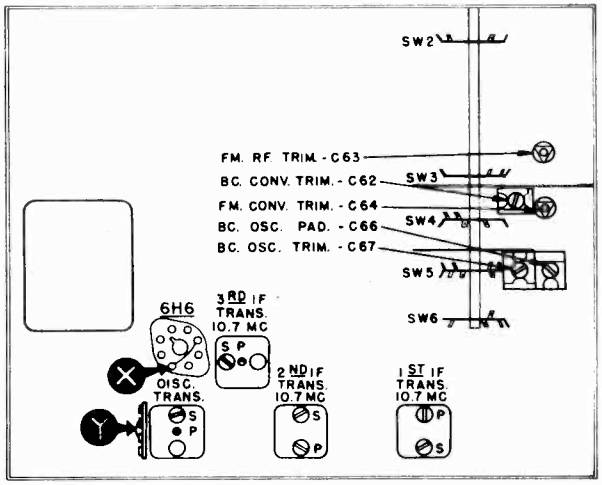


V-2138 PHONOGRAPH PRE-AMPLIFIER



WESTINGHOUSE ELECTRIC CORP. MODELS H-186, H-187





V-4931	Cable, output	V-3345S-10	Grommet, socket mounting
V-4930	Cable, power	RC20AE685M	Resistor, 6.8 megohms ½ w. (R1, R2)
RCP10W6502A	Capacitor, .005 mfd 600 v. (C1, C2)	RC20AE104M	Resistor, 100,000 ohms ½ w. (R3, R4, R5)
RCP10W4103A	Capacitor, .01 mfd 400 v. (C3)		
RCP10W4503A	Capacitor, .05 mfd 400 v. (C4)	RC20AE564K	Resistor, 560,000 ohms ½ w. (R6)
V-5765	Capacitor, dry electrolytic, 20 mfd 300 v. (C5)	RC20AE333M	Resistor, 33,000 ohms ½ w. (R7)
V-3254S	Connector, phono	V-4933	Socket, molded octal
V-3345S-5	Grommet, power cord		

V-2138 PHONO PRE-AMPLIFIER PARTS LIST

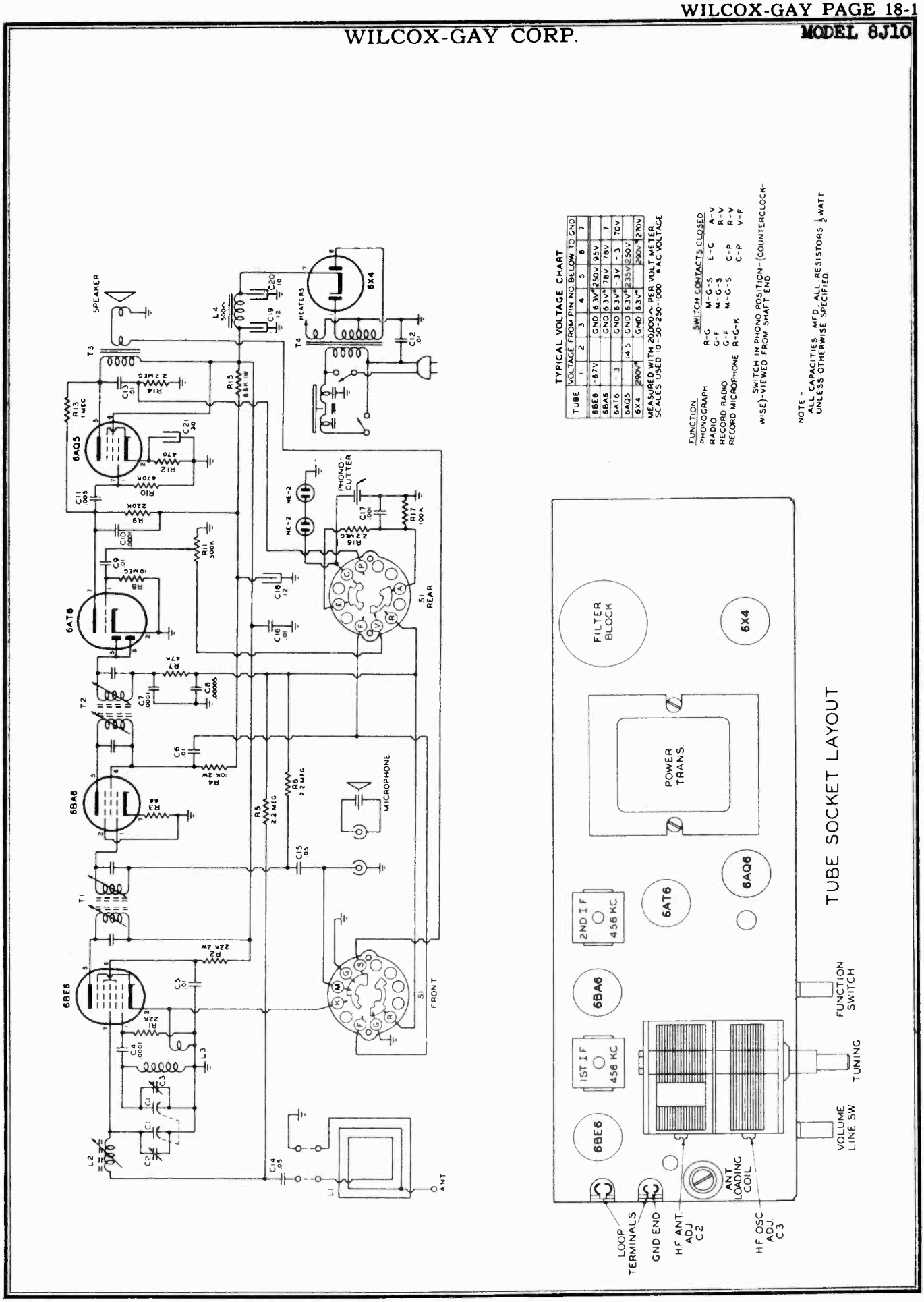
Description	*Part No.*	*Part No.*	*Description*
RC20AE332M	Resistor, 3300 ohms ½ w. (R29 R30, R31)	V-4292S-1	Socket, miniature molded
RC20AE121K	Resistor, 120 ohms ½ w. (R32)	V-3275S	Socket, molded octal tube
RC30AE103M	Resistor, 10,000 ohms 1 w. (R33)	V-3246S	Socket, octal tube
RC20AE225M	Resistor, 2.2 megohms ½ w. (R34, R35)	V-3252-2	Socket, pilot light (10¾" lead)
RC20AE330M	Resistor, 33 ohms ½ w. (R36, R37, R38)	V-3252-4	Socket, pilot light (8½" lead)
RC20AE475M	Resistor, 4.7 megohms ½ w. (R39)	V-5405	Socket, record changer, power
RC20AE473M	Resistor, 47,000 ohms ½ w. (R40)	V-5769**	Speaker, 12" Electro-Dynamic
RC20AE104K	Resistor, 100,000 ohms ½ w. (R41, R42)	V-3248S	Spring, dial drive
RC20AE224K	Resistor, 220,000 ohms ½ w. (R43, R44)	V-4900-2	Strike, bullet catch (H-186 and H-187 Blonde)
RC20AE154M	Resistor, 150,000 ohms ½ w. (R45)	V-4900-1	Strike, bullet catch (H-187 Mah.)
RC20AE683M	Resistor, 68,000 ohms ½ w. (R46)	V-3167S-1	Stud, pulley, threaded
RC41AE272K	Resistor, 2700 ohms 2 w. (R47)	V-3261-3	Switch Assembly, push button
V-4758	Resistor, 110 ohms 3 w. (R48)	V-5759	Switch, band (SW2, SW3, SW4, SW5, SW6)
V-4759	Resistor, 7500 ohms 5 w. (R49)	V-5174	Tabs, station, for push buttons
V-5705-1	Screw, escutcheon mounting	V-4771	Terminal Board, ANT.-GND.
V-5715	Shaft, tuning	V-3417	Terminal Board, FM antenna
V-5595	Shield, plate	V-4621	Transformer, 1st I-F (C75, C76, C77, C78, C79, L17, L18, L19, L20, R50)
V-4168	Shield, tube socket	V-4622	Transformer, 2nd I-F(C80, C81, C82, C83, L21, L22, L23, L24)
V-3344-2	Sleeve, spacer, variable capacitor mounting	V-4623	Transformer, 3rd I-F (C84, C85, L25, L26, L27, L28)
V-3353-3	Slide Mechanism, left hand	V-4624	Transformer, discriminator (C86, C87, L29, L30, L31)
V-3353-4	Slide Mechanism, right hand	V-4761	Transformer, power
V-3162S	Socket, 5 contact, phono power	V-3274S	Tube Holder
V-3288S	Socket, 6 contact, speaker	V-3317	Tuner Assembly, push button (C69, C70, C71, C72, C73, C74, L11, L12, L13, L14, L15, L16)
V-4832-1	Socket, lock-in tube		

Part No.	Description	Part No.
V-4777-2**	Antenna Assembly, FM dipole	R2CC21UJ100F
V-4762	Background, felt	
V-4965-1	Cable, phono input (record changer to pre-amplifier)	V-5442-1
RCP10W4103A	Capacitor, .01 mfd 400 v. (C1)	RCP10M6202M
RCP10M4103A	Capacitor, .01 mfd 400 v. (C2)	
RCP10W6502A	Capacitor, .005 mfd 600 v. (C3)	R2CC21CH050D R2CC36SL221M
RCP10W4503A	Capacitor, .05 mfd 400 v. (C4, C5, C6, C7, C8)	R2CC21PJ220K
RCM30B512M	Capacitor, .005 mfd mica (C9, C10, C11, C12, C13, C14)	R2CC26PJ470K
RCM30C272G	Capacitor, 2700 mmf mica (C15, C16)	R5CC21ZY471M
RCP10W6202M	Capacitor, .002 mfd 600 v. (C17)	V-5040-15
RCM20B101M	Capacitor, 100 mmf mica (C18, C19)	RCP10W4203A V-3241
RCP10W6102K	Capacitor, .001 mfd 600 v. (C20, C21)	V-4880
RCM30B103M	Capacitor, .01 mfd mica (C22, C23, C24, C25, C26)	V-3236
RCM20B271J	Capacitor, 270 mmf mica (C27, C28)	RCM20C181J
RCM20B221M	Capacitor, 220 mmf mica (C29, C30)	V-3302
R2CC21CH150J	Capacitor, 15 mmf ceramic	
V-4750	Capacitor, variable 3-gang (C55, C56, C57, C58, C59, C60)	V-3254S V-5130
V-4746	Capacitor, trimmer, B.C. antenna (C61)	V-3293
V-4747	Capacitor, trimmer, B.C. converter (C62)	V-4304-8 V-3239
V-4748	Capacitor, trimmer, FM (C63, C64, C65)	V-4966-1
V-4749	Capacitor, dual trimmer B.C. oscillator pad (C66) B.C. oscillator trimmer (C67)	V-4525-2 V-4765 V-5171
RCM30B222M	Capacitor, .0022 mfd mica (C68)	V-4902 V-5298-1
V-4887	Choke, FM antenna input (L1)	
V-4763	Clamp, dial	V-5298-5
V-4764	Clip, spring, dial mounting	
V-4751	Coil, B.C. antenna (L4)	V-5298-2
V-4752	Coil, B.C. converter (L5)	
V-4753	Coil, B.C. oscillator (L6)	V-5298-6
V-4767	Coil, FM (L7, L8)	
V-4768	Coil, FM oscillator (L9)	V-4934
V-3313	Coil, oscillator-cathode (L10)	
	Capacitor, 10 mmf ceramic (C32)	
	Capacitor, resonant type, 0.1 mfd 400 v. (C33)	
	Capacitor, .002 mfd 600 v. (C34, C35)	
	Capacitor, 5 mmf ceramic (C36)	
	Capacitor, 220 mmf ceramic (C37)	
	Capacitor, 22 mmf ceramic (C38)	
	Capacitor, 47 mmf ceramic (C39, C40, C41)	
	Capacitor, 470 mmf ceramic (C42, C43, C44)	
	Capacitor, .01 mfd 600 v. (C45)	
	Capacitor, .02 mfd 400 v. (C46)	
	Capacitor, dual line filter, .05-.05 mfd 600 v. (C47, C48)	
	Capacitor, electrolytic 2 mfd 50 v. (C49)	
	Capacitor, electrolytic 20 mfd 25 v. (C50)	
	Capacitor, 180 mmf mica (C51)	
	Capacitor, electrolytic 40 mfd 450 v. (C52) 40 mfd 450 v. (C53) 16 mfd 350 v. (C54)	
	Connector, phono	
	Control, dual tone (R2, R3)	
	Control, volume (R1) and switch (SW1)	
	Cord, dial drive	
	Cord, power, A-C	
	Cord, record changer, A-C power	
	Cushion, chassis mounting	
	Dial, glass	
	Escutcheon, push button	
	Glide, furniture	
	Grille Cloth Assembly, door, L.H. (H-187 Blonde)	
	Grille Cloth Assembly, door, L.H. (H-187 Mah.)	
	Grille Cloth Assembly, door, R.H. (H-187 Blonde)	
	Grille Cloth Assembly, door, R.H. (H-187 Mah.)	
	Grille Cloth Assembly, record storage (H-186)	

Part No.	Description	Part No.
V-5028-3	Knob, bass tone (H-186 and H-187 Mah.)	V-4954
V-5028-4	Knob, bass tone (H-187 Blonde)	V-5358-1
V-5316	Knob, door (H-186)	V-5066-1
V-4910	Knob, door, lower (H-187)	V-5066-5
V-5301	Knob, door, upper (H-187)	V-5359-1
V-4362-4	Knob, treble tone (H-186 and H-187 Mah.)	V-5066-2 V-5066-6
V-4362-5	Knob, treble tone (H-187 Blonde)	V-5745-1
V-4888-1	Knob, volume and tuning (H-186 and H-187 Mah.)	V-5745-2 RC20AE474M
V-4888-2	Knob, volume and tuning (H-187 Blonde)	RC20AE274K
No. 44	Lamp, pilot	
V-3283-3	Loop, B.C. antenna	
V-4781	Molding Assembly, dial	RC20AE105M
V-5747	Molding Assembly, dial, lettered	RC20AE156M
V-4696	Nameplate, Westinghouse-FM	
V-4783-1	Plate, front glass (H-186 and H-187 Mah.)	
V-4783-2	Plate, front glass (H-187 Blonde)	
V-3399	Pointer Assembly, dial	
V-4967	Pull, drawer (H-186)	
V-3166S	Pulley, 7/16" dia.	
V-5166-1	Push Button	
V-3181	Rail, pointer	
V-4886-1	Reactor, R-F (L2, L3)	
RC20AE153J	Resistor, 15,000 ohms ½ w. (R4, R5)	
RC20AE101M	Resistor, 100 ohms ½ w. (R6, R7)	
RC20AE153K	Resistor, 15,000 ohms ½ w. (R8)	
RC20AE471K	Resistor, 470 ohms ½ w. (R9)	
RC20AE223K	Resistor, 22,000 ohms ½ w. (R10)	
RC20AE683K	Resistor, 68,000 ohms ½ w. (R11)	
RC20AE224M	Resistor, 220,000 ohms ½ w. (R12, R13)	
RC30AE682K	Resistor, 6800 ohms 1 w. (R14)	
RC30AE332K	Resistor, 3300 ohms 1 w. (R15)	
RC20AE680K	Resistor, 68 ohms ½ w. (R16, R17)	
RC20AE333K	Resistor, 33,000 ohms ½ w. (R18, R19)	

Description	Part No.
Grille Cloth Assembly, speaker (H-186)	
Hinge, left (H-186)	
Hinge, left (H-187 Blonde)	
Hinge, left (H-187 Mah.)	
Hinge, right (H-186)	
Hinge, right (H-187 Blonde)	
Hinge, right (H-187 Mah.)	
Knob, band (H-186 and H-187 Mah.)	
Knob. band (H-187 Blonde)	
Resistor, 470,000 ohms ½ w. (R20, R21, R22, R23)	
Resistor, 270,000 ohms ½ w. (R24, R25, R26)	
Resistor, 1 megohm ½ w. (R27)	
Resistor, 15 megohms ½ w.	

WILCOX-GAY CORP. **MODEL 8J10**



MODEL 8J10

WILCOX-GAY CORP.

PART NO.	NAME
5-3103	Arm Rest Bracket
8-2311-1	Cabinet with loop antenna (Portable)
147-1	Capristor .01 mfd. 10 megohms Res. +20% Cap. —20% +50%
147-2	Capristor .0001 mfd. 22,000 ohms Res. +20% Cap. —20% +50%
147-4	Capristor .0001 mfd. 220,000 ohms Res. +20% Cap. —20% +50%
147-5	Capristor .005 mfd. 470,000 ohms Res. +20% Cap. —20% +50%
14-2100	Capristor—Diode Filter
16-2076	Cartridge Clip
114-54	Chassis Vent Screen
18-2049	Condenser Electrolytic
23-2144	Crystal Cartridge Phono-Cutter
28-2063	Escutcheon & Dial
57-3266	Feed Screw
14-2103	Filter Choke (L4)
2-3072-A	Follower Arm Assembly
68-3009	1st or 2nd I.F. Transformer K-Trans.
51-3081	Idler Slip Plate
51-3085-A	Idler Slip Plate Assembly
97-2029	Idler Tension Spring
79-2010	Idler Wheel
40-2126-1	Knob
40-2123-3	Knob
70-2115	Light Weight 10" Turntable
17-3036-A	Loop Loading Coil Assembly (L2)
108-15-4	Microphone
5-3112-A	Microphone Bracket Assembly
35-2018	Motor Mounting Grommets
97-3034	Needle Holder Spring
69-2174-A	Neon Limiter Assembly
17-3041-A	Osc. Coil Assembly (L3)
81-2106	Output Transformer — T3
39-2023	Pointer
80-2186	Power Transformer — T4
57-2056	Retaining screw — needle
47-2066	Rim Drive Recording Motor
7-2053	Shaving Collector Brush
66-3014	Slide Switch with Cover
64-2092	Speaker
73-2281	Turntable Holding Clip
77-2098	Variable Capacitor — C1
19-2194	Volume Control
66-3020	Wafer Switch — (S1)

An OUTPUT METER, connected to the speaker voice coil terminals, should be used for accuracy in making ganging adjustments.

The voice coil terminals, as well as the I.F. trimmers, may be made accessible by removing the screws by which the motor panel is mounted in the cabinet. Before lifting off the phono-recorder unit, MOVE THE PHONO. ARM TO THE CENTER OF THE TURNTABLE, and permit the arm to maintain this position until after the unit has been restored to the cabinet. In this way, the follower arm which engages the lateral feed screw will be protected against damage.

The R.F. trimmers and loop loading coil may be reached by raising front edge of panel.

Connect signal generator to control grid of 6BE6 tube.*

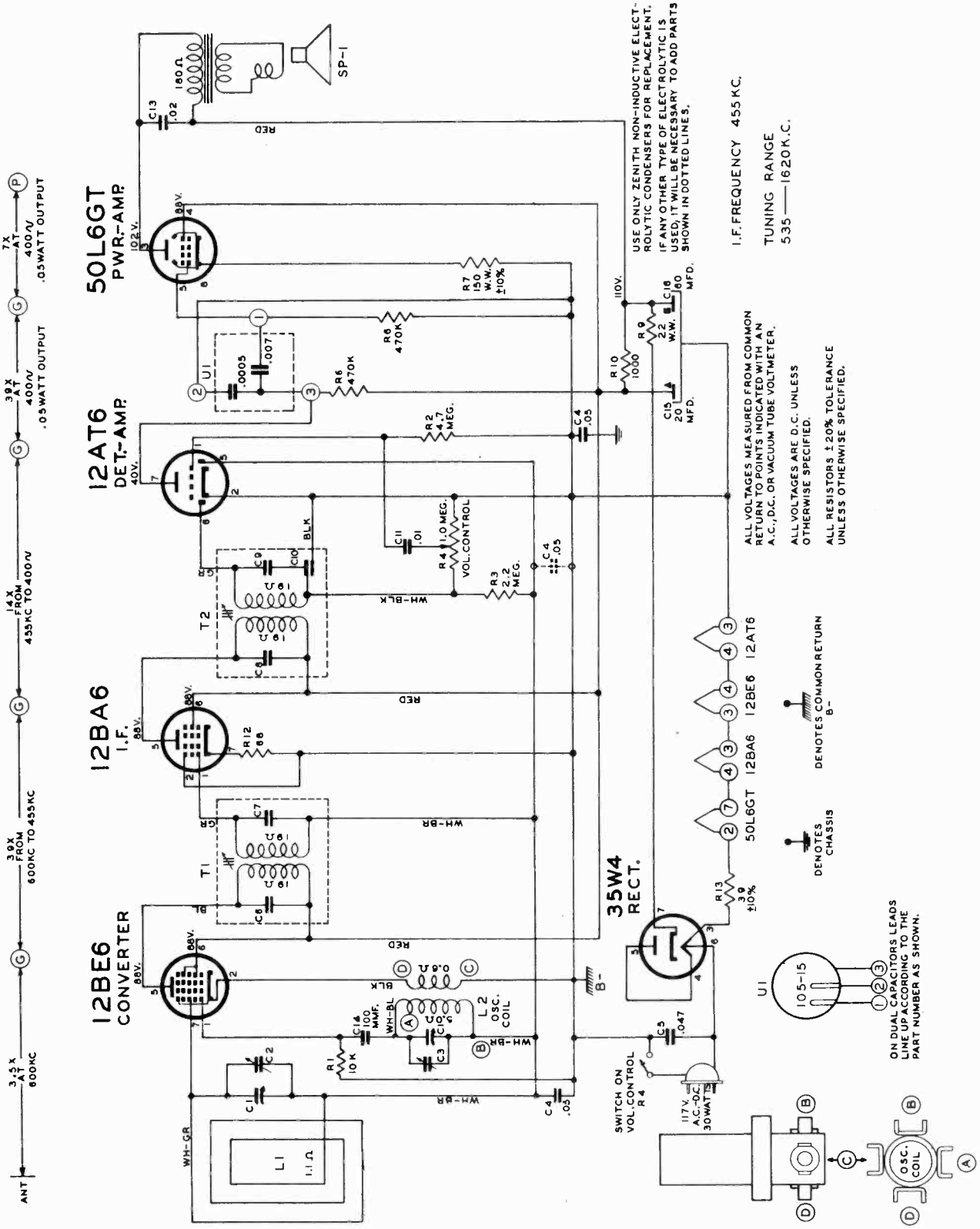
SIGNAL GENERATOR FREQUENCY	DIAL POSITION	TRIMMER
456 K.C.	1400 K.C.	T2-S** (Top Screw)
456 K.C.	1400 K.C.	T2-P** (Bottom Screw)
456 K.C.	1400 K.C.	T1-S** (Bottom Screw)
456 K.C.	1400 K.C.	T1-P** (Top Screw)

Connect signal generator to ANT. and GND. terminals.

1400 K.C.	1400 K.C.	C-3 OSC.
1400 K.C.	1400 K.C.	C-2 ANT.
600 K.C.	600 K.C.	L-2 Loop Loading Coil

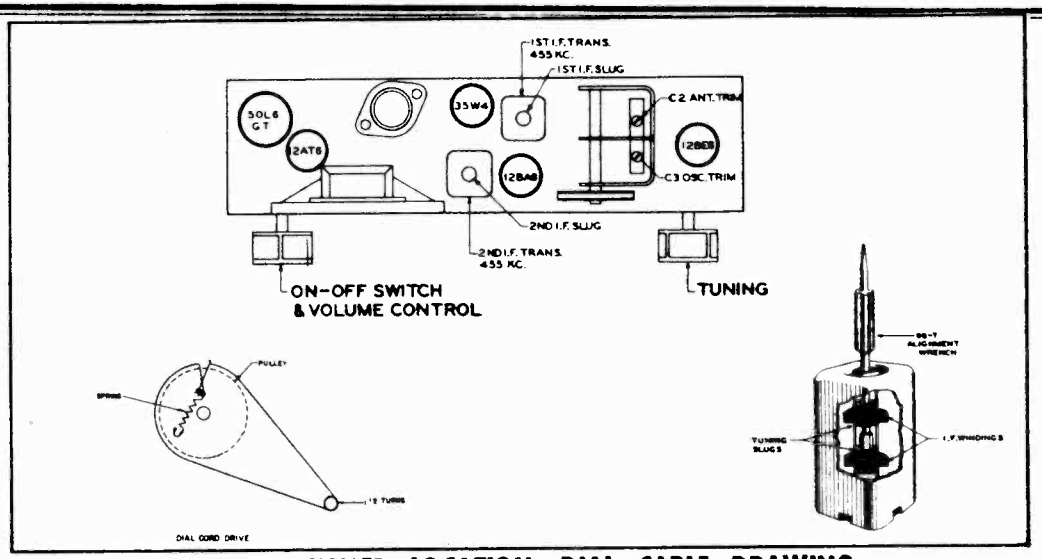
ZENITH RADIO CORP.

MODEL 5D810,
CHASSIS 5E02



PARTS LIST

PART NO.			
		DIAL ASSEMBLY	
26-415		Dial Scale	
59-222		Dial Pointer	
76-515		Tuning Shaft	
80-209		Dial Cord Tension Spring	
188-32		Retaining Ring	
188-54		Retaining Ring (Pointer)	
S14843		Dial Cord & Eyelet Assem.	
		COILS & CHOKES	
95-1101	T-1	1st. I. F. Transformer	
95-1102	T-2	2nd. I. F. Transformer	
S14842	L-2	Oscillator Coil Assem.	
		CONDENSERS	
22-162	C-14	100 Mfd. (or 22-1669)	500V.
22-829	C-4	.05 Mfd.	200V.
22-854		.0005 Mfd.	600V.
22-1158	C-4	.05 Mfd.	200V.
22-1379	C-13	.02 Mfd.	400V.
22-1775	C-5	.047 Mfd.	400V.
22-1804	C15, 16	Dry Electrolytic 60 x 20 Mfd.	150V.
22-1807	C-1	Two Section Gang	
105-14	U-1	Dual Ceramic	
		RESISTORS	
63-686	R-7	150 Ohm W.W. Insl.	1/2W
63-1219	R-9	22 Ohm W.W. Insl.	1/2W
63-1574	R-10	1 M Ohm Insl.	1W
63-1575	R-13	39 Ohm W.W. Insl.	2W
63-1660	R-4	Vol. Con. & Sw.	
63-1737	R-12	68 Ohm Insl.	1/2W
63-1782		820 Ohm Insl.	1/2W
63-1814		4700 Ohm Insl.	1/2W
63-1828	R-1	10M Ohm Insl.	1/2W
63-1898	R-6	470M Ohm Insl.	1/2W
63-1926	R-3	2.2 Megohm Insl.	1/2W
63-1940	R-2	4.7 Megohm Insl.	1/2W
		MISCELLANEOUS	
11-79		Line Cord & Plug (6 Ft.)	
14-1010		Model 810Y Plastic Cabinet	
46-745Y		Tuning & Vol. Con. Knob (2 Used)	
49-645	SP-1	4" P.M. Speaker	
		206-645 Output Trans.	
		208-645 Cone & Voice Coil	
54-139		#3/8-32 x 9/16 Palnut	
54-211		Speed Nut	
54-267		#6-32 x 5/16 Palnut	
57-1407		Cabinet Front Plate	
78-275		Socket - Electrolytic	
78-611		Socket - Octal Tube (8 Contact)	
78-806		Socket - Miniature Tube	
78-807		Socket - Miniature Tube (3 Used)	
83-1057		Line Cord Insulating Strip	
94-334		Gang Cond. Mtg. Bushing	
112-697		#6 x 7/16 Straight Side B.H.S.T. Screw	
114-67		#6-32 x 7/16 Hex Acorn Hd. M.S.	
114-217		#8 x 1/4 Hex Hd. Slotted S. T. Screw	
125-17		Rubber Grommet	
139-73		Spk. Baffle	
159-69		Trimount Stud (Cab. Back Mtg.)	
166-44		Rubber Bumper (or 166-41)	
202-665		Instruction Book	
S14879	L-1	Wavemagnet Assem.	
S14951		Front Plate & Spk. Baffle Assem.	



TUBE, TRIMMER LOCATION, DIAL CABLE DRAWING AND DETAILED VIEW OF I. F. TRANSFORMERS.

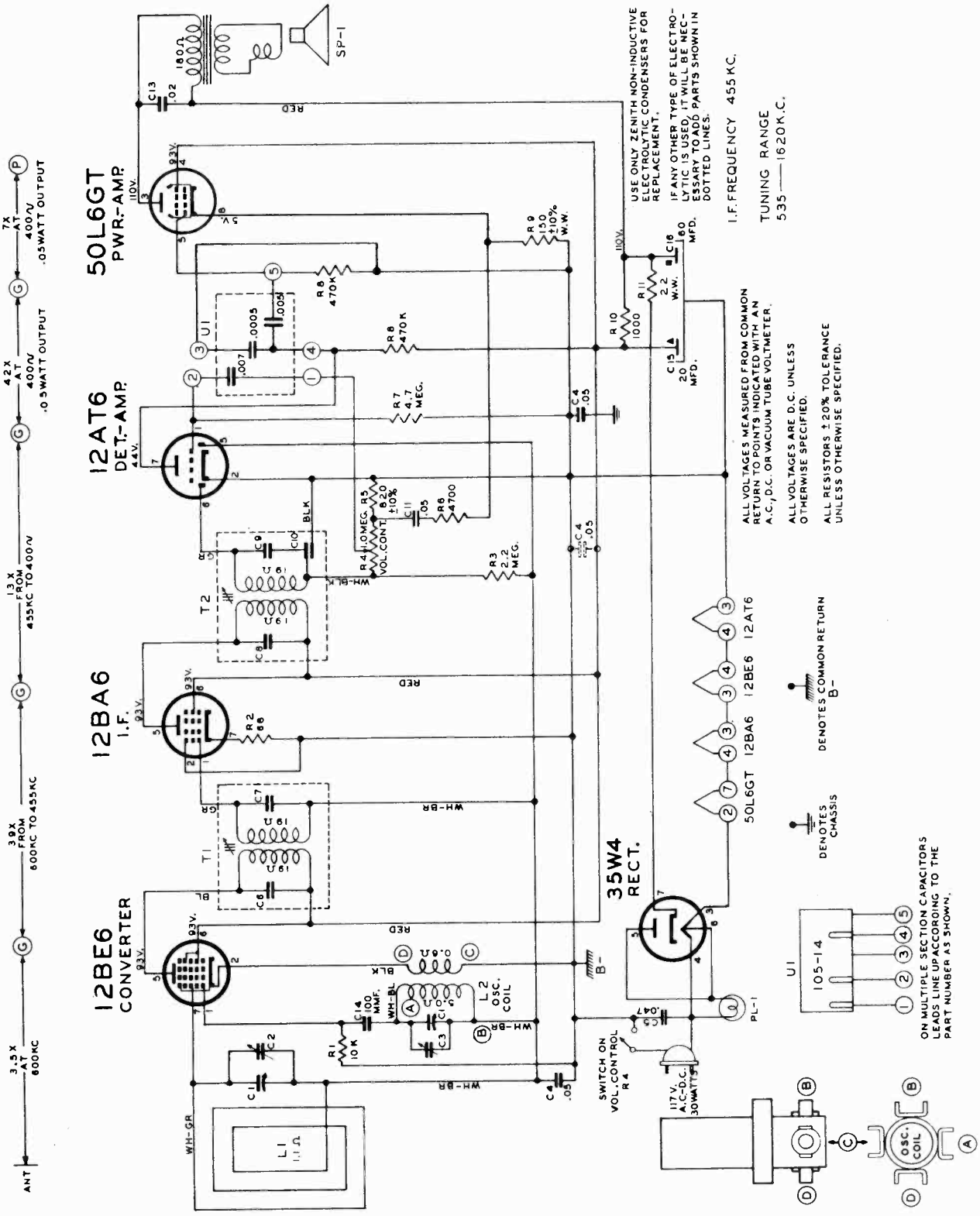
The I.F. transformers incorporated in this receiver are of the new permeability tuned type. The advantage of an I. F. transformer of this type is its extreme stability under various humidity and temperature conditions. The upper coil is the secondary and the lower the primary. When adjusting these I. F. transformers the tuning wrench 68-7 can be inserted into the top slug, rotated until maximum output is obtained and then dropped down to the lower slug and the same operation repeated. The tuning wrench is so designed that turning one slug does not affect the adjustment of the other.

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 Mfd.	455 Kc.	600 Kc.	Adjust Primary & Secondary Slugs	For I. F. Alignment
2	One Turn Loop Coupled Loosely to Wave Magnet	--	1600 Kc.	1600 Kc.	C-3	Set Oscillator to Dial Scale.
3		--	1400 Kc.	1400 Kc.	C-2	Align Antenna Stage

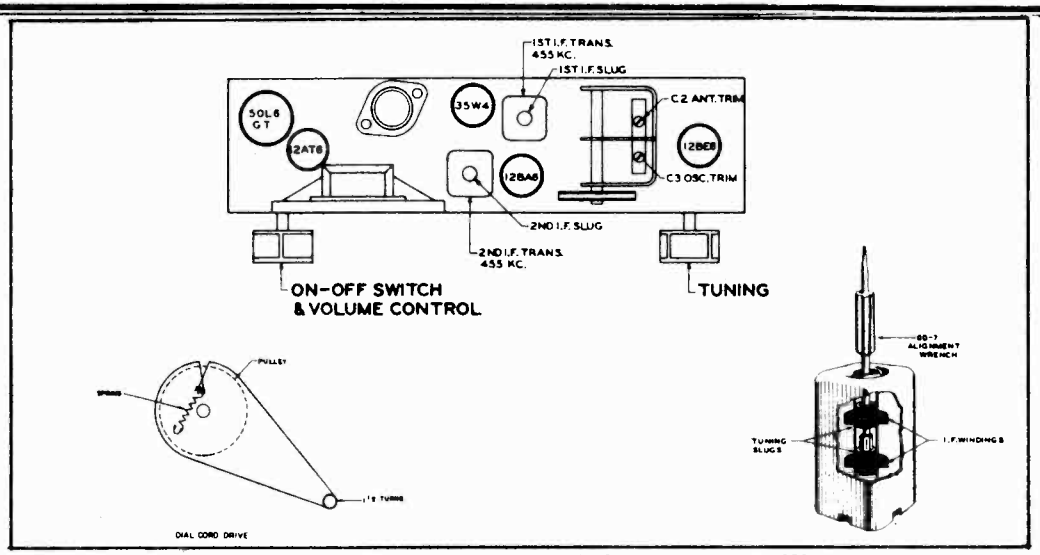
ZENITH RADIO CORP.

MODEL 5D811,
CHASSIS 5E01



PARTS LIST

PART NO.		
		DIAL ASSEMBLY
26-414		Dial Scale
59-222		Dial Pointer
76-515		Tuning Shaft
78-820		Pilot Light Socket & Wire
80-209		Dial Cord Tension Spring
100-67		Dial Light Bulb - 6.3V. -.15 Amp.
188-32		Retaining Ring
188-54		Retaining Ring (Pointer)
S14843		Dial Cord & Eyelet Assem.
		COILS & CHOKES
95-1101		1st I.F. Transformer
95-1102		2nd I.F. Transformer
S14842		Osc. Coil Assem.
		CONDENSERS
22-162	C-14	100 Mmfd. (or 22-1669) ... 500V.
22-829	C-4	.05 Mfd. ... 200V.
22-854		.0005 Mfd. ... 600V.
22-1158	C-11	.05 Mfd. ... 200V.
22-1379	C-13	.02 Mfd. ... 400V.
22-1775	C-5	.047 Mfd. ... 400V.
22-1804	C15, 16	Dry Electrolytic 60 x 20 Mfd. ... 150V.
22-1807	C-1	Two Section Gang
105-14	U-1	Dual Ceramic
		RESISTORS
63-686	R-9	150 Ohm W.W. Insl. ... 1/2W
63-1219	R-11	22 Ohm W.W. Insl. ... 1/2W
63-1574	R-10	10000 Ohm Insl. ... 1W
63-1660	R-4	Vol. Con. & Sw.
63-1737	R-2	68 Ohm Insl. ... 1/2W
63-1782	R-5	820 Ohm Insl. ... 1/2W
63-1814	R-6	4700 Ohm Insl. ... 1/2W
63-1828	R-1	10M Ohm Insl. ... 1/2W
63-1898	R-8	470M Ohm Insl. ... 1/2W
63-1926	R-3	2.2 Megohm Insl. ... 1/2W
63-1940	R-7	4.7 Megohm Insl. ... 1/2W
		MISCELLANEOUS
11-79		Line Cord & Plug (6 Ft.)
14-1011		Model 811 Plastic Cabinet
14-1011W		Model 811W Plastic Cabinet
14-1011Y		Model 811Y Plastic Cabinet
43-165		Handle Housing
46-744		Tuning & Vol. Con. Knob (2 Used) (5D811)
46-744Y		Tuning & Vol. Con. Knob (2 Used) (5D811W - 811Y)
49-645	SP-1	4" P.M. Speaker
		206-645 Output Trans.
		208-645 Cone & Voice Coil
54-211		Speed Nut
57-1408		Cabinet Front Plate
78-275		Socket - Electrolytic
78-611		Socket - Octal Tube (8 Contact)
78-806		Socket - Miniature Tube
78-807		Socket - Miniature Tube
83-1057		Line Cord Insulating Strip
83-1393		Rubber Strip (Handle)
93-487		1/16 x .144 x 3/8 Steel Washer
94-334		Gang Cond. Mtg. Bushing
102-543		Insignia Label
112-407		#6 x 3/8 R.H.S.T. Screw
112-697		#6 x 7/16 Straight Side B.H.S.T. Screw
114-67		#6-32 x 7/16 Hex Acorn Hd. M.S. (3 Used)
114-217		#8 x 1/4 Hex Hd. Slotted S. T. Screw (2 Used)
125-17		Rubber Grommet
139-74		Spk. Baffle
159-69		Trimount Stud (Cab. Back Mtg.)
166-44		Rubber Bumper (or 166-41)
199-103		Flexible Handle Sleeve (5D811)
199-103Y		Flexible Handle Sleeve (5D811W-811Y)
202-665		Instruction Book
S13210		Strip & Rivet Assem. (Handle Strap)
S14952		Front Plate & Spk. Baffle Assem.
S14976	L-1	Wavemagnet Assem. (5D811-811Y)
S14977	L-1	Wavemagnet Assem. (5D811W)



TUBE, TRIMMER LOCATION, DIAL CABLE DRAWING AND DETAILED VIEW OF I. F. TRANSFORMERS.

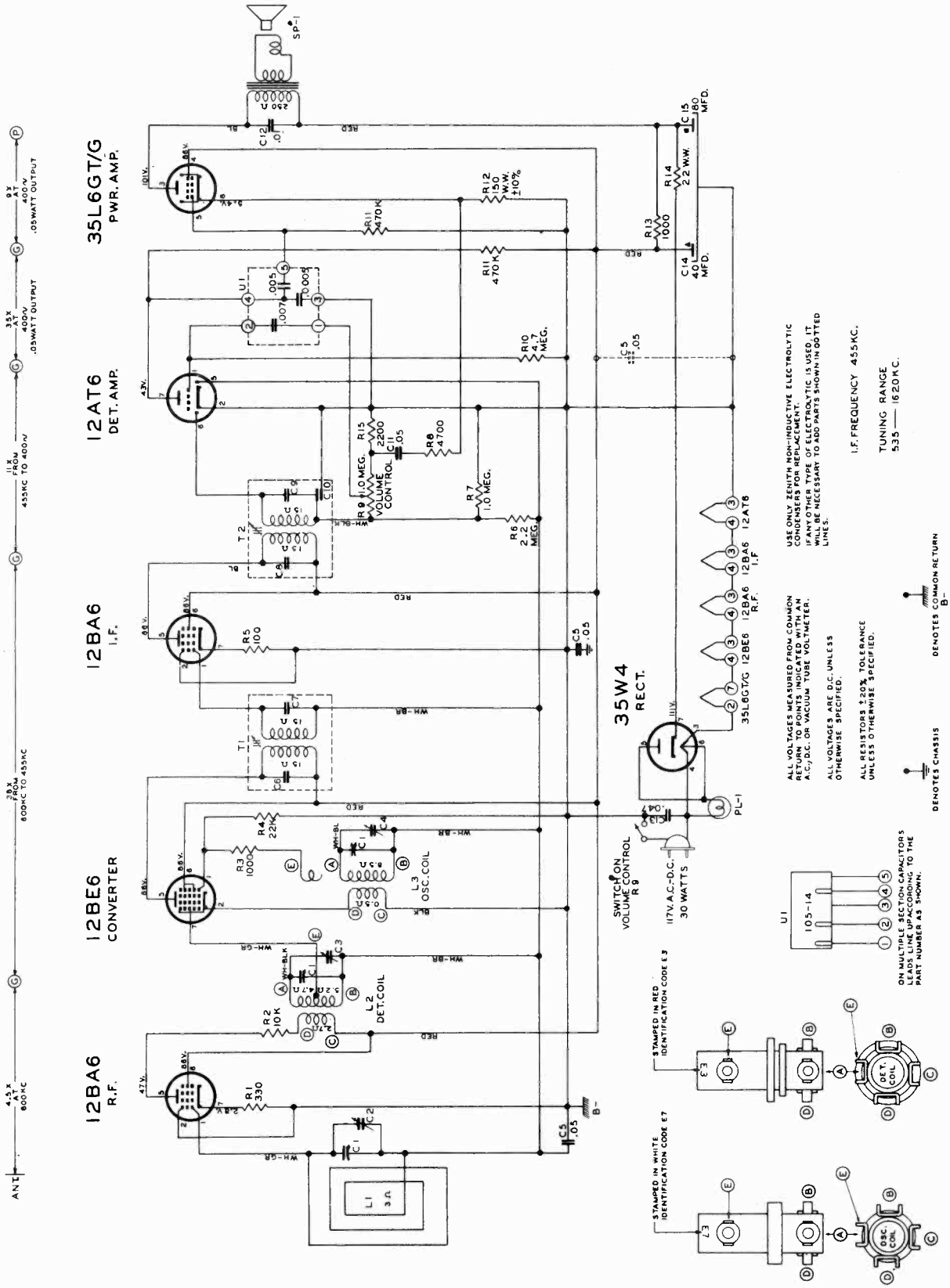
The I.F. transformers incorporated in this receiver are of the new permeability tuned type. The advantage of an I. F. transformer of this type is its extreme stability under various humidity and temperature conditions. The upper coil is the secondary and the lower the primary. When adjusting these I. F. transformers the tuning wrench 68-7 can be inserted into the top slug, rotated until maximum output is obtained and then dropped down to the lower slug and the same operation repeated. The tuning wrench is so designed that turning one slug does not affect the adjustment of the other.

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 Mfd.	455 Kc.	600 Kc.	Adjust Primary & Secondary Slugs	For I. F. Alignment
2	One Turn Loop Coupled Loosely to Wave Magnet	--	1600 Kc.	1600 Kc.	C-3	Set Oscillator to Dial Scale.
3		--	1400 Kc.	1400 Kc.	C-2	Align Antenna Stage

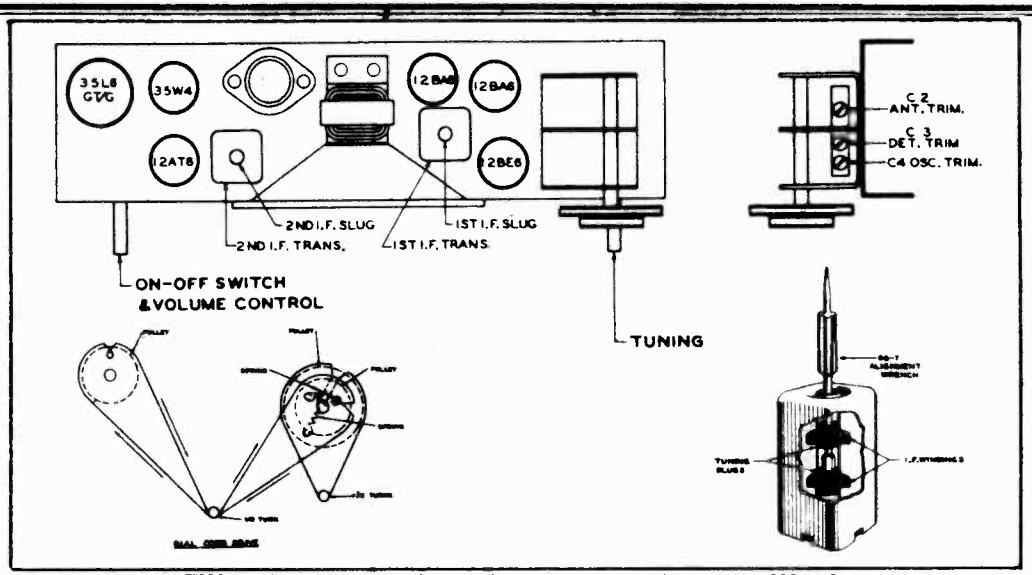
ZENITH RADIO CORP.

MODEL 6D815,
CHASSIS 6E05



PARTS LIST

PART NO.	REF. NO.	DESCRIPTION
		DIAL ASSEMBLY
26-411		Dial Scale
59-219		Dial Pointer
76-519		Tuning Shaft
78-822		Dial Light Socket and Wire
80-69		Dial Cord Tension Spring
80-209		Dial Cord Tension Spring
97-284		Dial Cord Guide Stud
100-67	PL-1	Dial Light Bulb - 6.3 VC .15 Amp.
188-32		Retaining Ring
188-60		Retaining Ring
S-14834		Dial Cord and Eyelet Assembly (Short)
S-14866		Dial Cord and Eyelet Assembly (Long)
S-14867		Pointer Pulley and Bushing Assembly
S-14868		Pointer Pulley Bracket and Stud Assembly
		COILS AND CHOKES
95-1101	T1	1st I. F. Transformer
95-1102	T2	2nd I. F. Transformer
S-14832	L2	Detector Coil Assembly
S-14833	L3	Oscillator Coil Assembly
		CONDENSERS
22-178	C-11	.05 MFD ..... 200 V
22-829	C-5	.05 MFD ..... 200 V
22-1182	C-12	.01 MFD ..... 400 V
22-1775	C-13	.047 MFD ..... 400 V
22-1805	C-1	Three Section Gang
22-1808	C-14, C-15	Dry Electrolytic 80 x 40 MFD 150 V
105-14	U-1	Multiple Copocitor Unit
		RESISTORS
63-68b	R12	150 Ohm W.W. Insulated ..... 1/2 W
63-1219	R14	22 Ohm W.W. Insulated ..... 1/2 W
63-1574	R13	1M Ohm Insulated ..... 1 W
63-1664	R9	Vol. Con. and Switch
63-1744	R5	100 Ohm Insulated ..... 1/2 W
63-1765	R1	330 Ohm Insulated ..... 1/2 W
63-1786	R3	1M Ohm Insulated ..... 1/2 W
63-1814	R8	4700 Ohm Insulated ..... 1/2 W
63-1828	R2	10M Ohm Insulated ..... 1/2 W
63-1842	R4	22M Ohm Insulated ..... 1/2 W
63-1898	R11	470M Ohm Insulated ..... 1/2 W
63-1912	R7	1 Megohm Insulated ..... 1/2 W
63-1926	R6	2.2 Megohm Insulated ..... 1/2 W
63-1940	R10	4.7 Megohm Insulated ..... 1/2 W
63-1800	R15	2200 Ohm Insulated ..... 1/2 W
		MISCELLANEOUS
11-85		Line Cord and Plug
14-1015		Model 815 Plastic Cabinet
14-1015W		Model 815W Plastic Cabinet
14-1015Y		Model 815Y Plastic Cabinet
43-165		Handle Housing
46-744		Tuning and Vol. Con. Knob (2 used)
46-744Y		Tuning and Vol. Con. Knob (2 used) (815W & 815Y)
49-643	SP1	5 1/4" P.M. Speaker
		206-643 Output Trans.
		208-643 Cone and Voice Coil
54-30		8-32 x 5/16 Hex Nut (Spk. Mtg.)
54-129		Speed Nut (Used on 26-411 and 57-1409)
57-1409		Cabinet Front Plate
78-275		Socket Electrolytic
78-611		Socket Octal Tube (8 Contact)
78-806		Socket Miniature Tube
78-807		Socket Miniature Tube (4 used)
83-1057		Line Cord Insulating Strip
83-1165		Handle Strap
83-1166		Handle Strap (Slotted)
83-1393		Handle Strip (Rubber)
93-766		Steel Washer
93-906		Block Felt Washer
93-941		Bakelite Washer
94-295		Gang Cond. Mtg. Bushing
112-407		#6 x 3/8 R.H.S.T. Screw (2 Used on 43-165)
112-697		#6 x 7/16 Straight Side B.H.S.T. Screw
114-217		#8 x 1/4 Hex Hd. Slotted S.T. Screw (Spk. Mtg.)
114-291		#8-32 x 7/16 Hex Hd. Slotted M.S. (Spk. Mtg.)
125-17		Rubber Grommet
139-71		Speaker Baffle
139-75		Baffle Board
159-69		Trimount Stud (Cab Back Mtg.) (4 used)
166-44		Rubber Bumper (or 166-41)
171-10		Pilot Light Lens
199-103		Flexible Handle Sleeve
199-103Y		Flexible Handle Sleeve (6D815W & 815Y)
202-666		Instruction Book
S-14868	L1	Wavemagnet Assembly
S-14978		Wavemagnet Assembly (6D815W only)



TUBE, TRIMMER LOCATION, DIAL CABLE DRAWING AND DETAILED VIEW OF I. F. TRANSFORMERS.

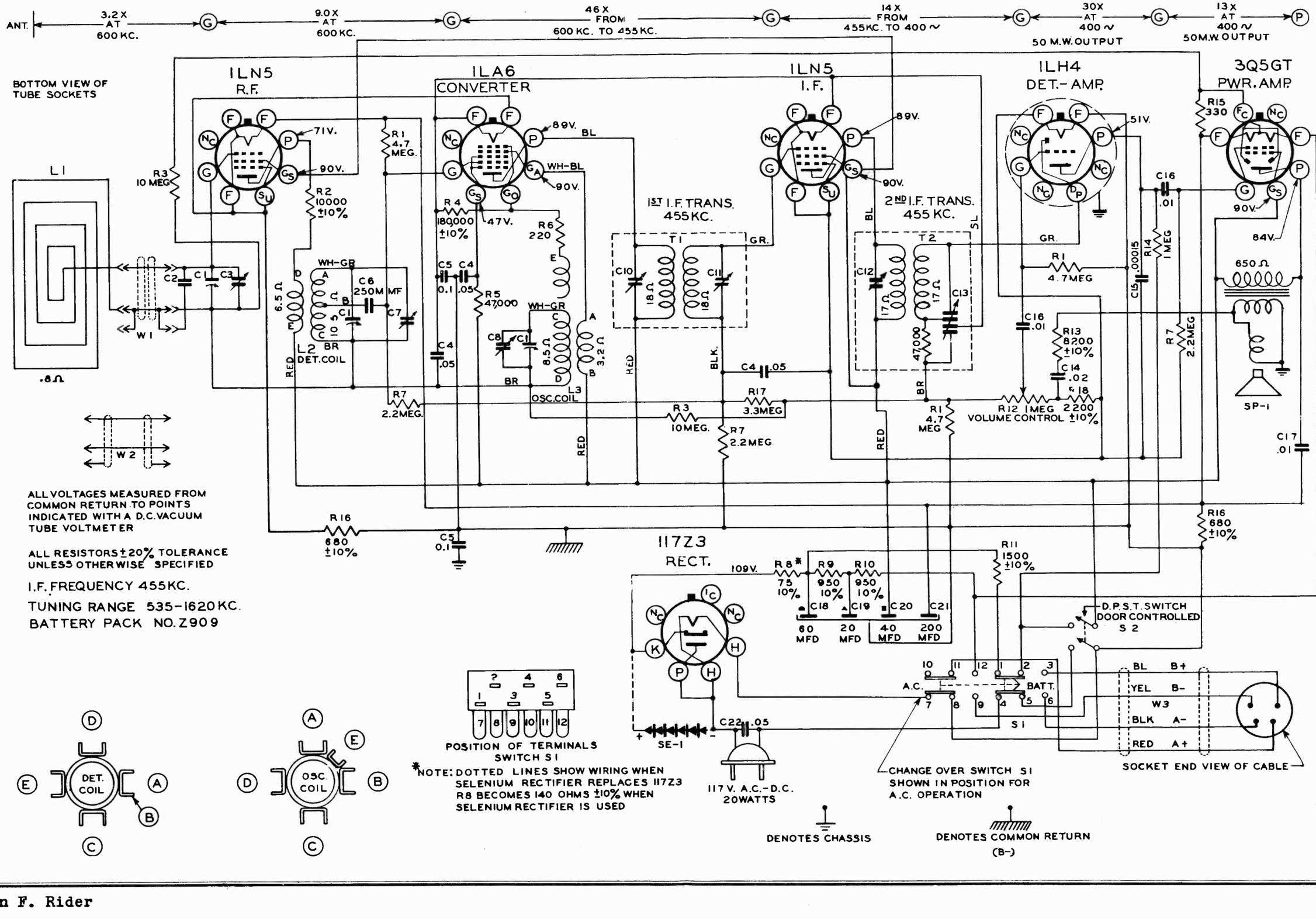
The I.F. transformers incorporated in this receiver are of the new permeability tuned type. The advantage of an I. F. transformer of this type is its extreme stability under various humidity and temperature conditions. The upper coil is the secondary and the lower the primary. When adjusting these I. F. transformers the tuning wrench 68-7 can be inserted into the top slug, rotated until maximum output is obtained and then dropped down to the lower slug and the same operation repeated. The tuning wrench is so designed that turning one slug does not affect the adjustment of the other.

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Convertor Grid	.5 Mfd.	455 Kc.	600 Kc.	Adjust Primary & Secondary Slugs	For I.F. Alignment
2	Single Turn Loosely Coupled to Wave Magnet	--	1600 Kc.	1600 Kc.	C-4	Set Oscillator to Dial Scale.
3		--	1400 Kc.	1400 Kc.	C-3	Detector Alignment
4		--	1400 Kc.	1400 Kc.	C-2	Antenna Alignment

ZENITH RADIO CORP.

MODEL 6G801,
CHASSIS 6E40

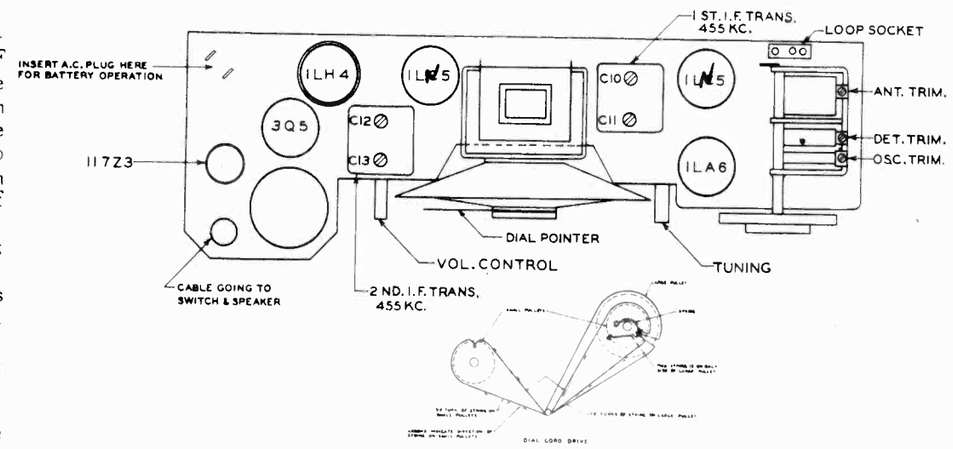


The 6E40 chassis is an AC, DC or battery operated superheterodyne circuit with a stage of RF amplification. The chassis is isolated from the DC circuit, and all measurements must be made from a common negative point. The most convenient place to reach this negative point is the terminal strip to which C5 is connected. The DC resistance from chassis to any circuit must be almost infinite. If any circuit becomes grounded a hum will appear. Microphonic tubes will cause audio howl. Check 1LA6.

The wavemagnet is connected to the chassis with a two wire cable. If the R.F. becomes weak or dead, check the D.C. resistance of the wavemagnet and connecting cable. This D.C. resistance should be approximately 1.75 ohms. If it is open check the cable and wavemagnet.

IF Alignment: Remove the chassis from the cabinet and arrange the units so that the wavemagnet can be plugged in. All the connections and adjustments can be made from the top of the chassis. Connect a signal generator, through a .1 mfd. dummy antenna, to the lug on top of the center section of the gang condenser (converter grid) and condenser gang frame. Connect an output meter across the voice coil of the speaker (two lugs provided). Set the signal generator to 455 Kc. and adjust C10, C11, C12 and C13 for maximum indication on the output meter. Always keep the signal output from the generator just high enough to get an indication, otherwise excessive loading may result. Remove the signal generator leads from the gang.

RF Alignment: Connect a two turn loop across the leads of the signal generator, loosely couple this loop to the wavemagnet. Set the signal generator and the dial pointer of the receiver to 1600 Kc. and adjust oscillator trimmer to resonance. Set the signal generator and dial pointer to 1400 and adjust detector trimmer and antenna trimmer to resonance. These trimmers are on the top of gang condenser. Check operation and re-install set in cabinet. Tune in a weak station near 1400 Kc. or use background noise and readjust antenna trimmer for maximum sensitivity.



TUBE, TRIMMER LOCATION AND DIAL CABLE DRAWING

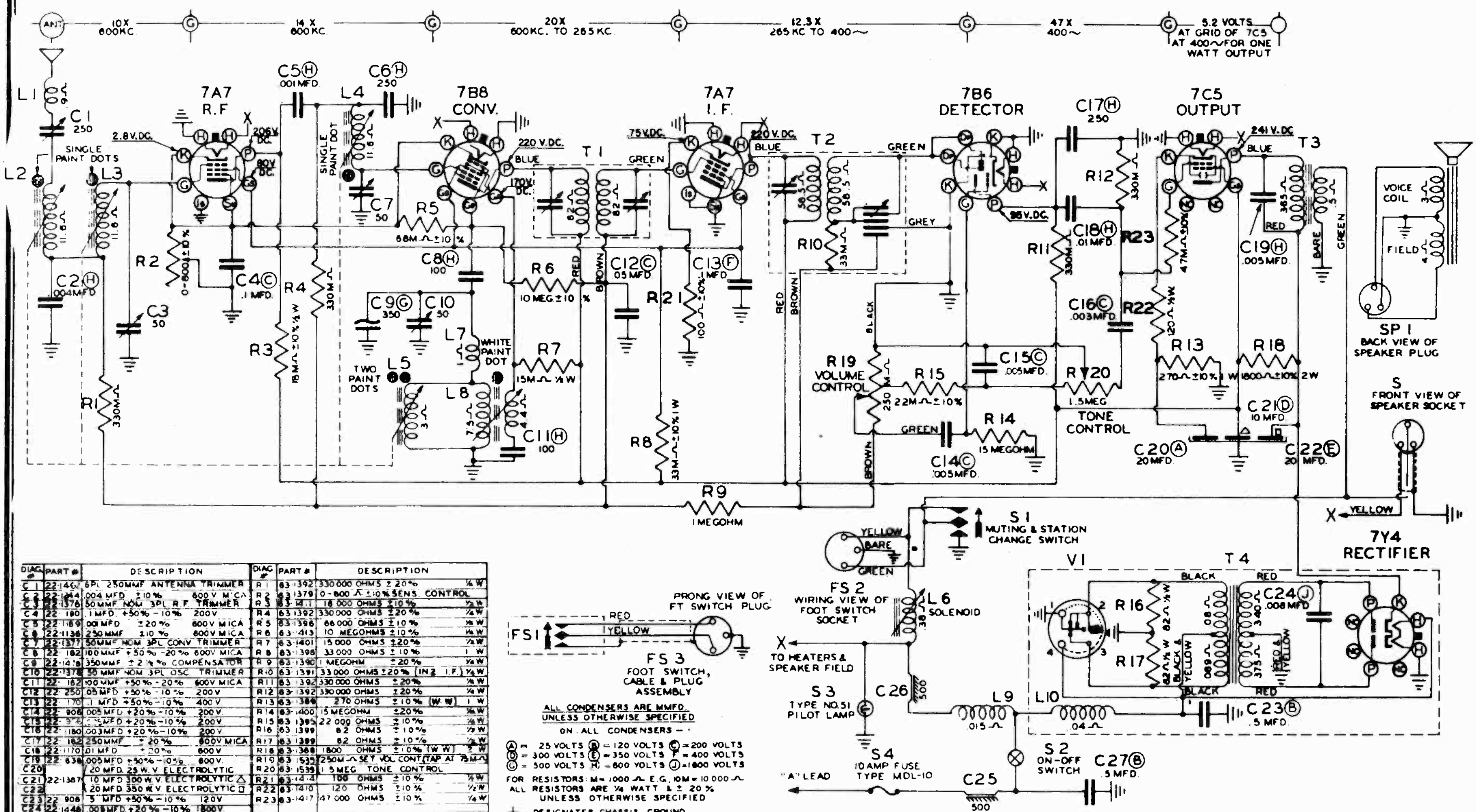
ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	BAND	SET DIAL TO	TRIMMERS	PURPOSE
1	Converter Grid	.1 Mfd	455 Kc.	BC	600 Kc.	C-10-11-12-13	I.F. Alignment
2	Two turns loosely coupled to Wavemagnet		1600 Kc.	BC	1600 Kc.	Osc. Trim.	Set Oscillator to scale
3	Two turns loosely coupled to Wavemagent		1400 Kc.	BC	1400 Kc.	Det. Trim.	Align Det.
4	Two turns loosely coupled to Wavemagnet		1400 Kc.	BC	1400 Kc.	Ant. Trim.	Align Wavemagnet

PART NO.	REF. NO.	DESCRIPTION
		DIAL ASSEMBLY
26-399		Louver dial
54-262		Speed nut (4 used on 26-399)
76-500		Tuning Control Shaft
80-69		Dial Cord Tension Spring
80-209		Dial Cord Tension Spring
188-32		Retaining Ring (76-500)
188-75		Retaining Ring (S-13829)
S-13829		Dial Pointer & Pulley Assembly (59-201)
S-13830		Condenser Pulley & Bushing Assembly
S-13838		Pulley Mtg. Bracket & Stud Assembly
S-14407		Dial Cord & Eyelet Assembly (Long)
S-1440b		Dial Cord & Eyelet Assembly (Short)
		COILS AND CHOKES
95-1085	T1	1st I.F. Transformer
95-1086	T2	2nd I.F. Transformer
S-14385	L2	Detector Coil Assembly
S-14389	L3	Oscillator Coil Assembly
		CONDENSERS
22-182	C6	.00025 MFD. (or 22-1666) 500 V.
22-196	C16	.01 MFD 600 V.
22-327	C14	.02 MFD 200 V.
22-470	C15	150 MMFD. (or 22-1675) 500 V.
22-827	C5	.1 MFD. 200 V.
22-829	C4	.05 MFD 200 V.
22-1017	C22	.05 MFD 400 V.
22-1182	C17	.01 MFD 400 V.
22-1726	C3,7,8	Single Section Trimmer (use with 22-1352)
22-1727	C1	Three Gang Variable (or 22-1352)
22-1741	C18,19, 20,21	Four Section Electrolytic 20-40-60 MFD.-150V. x 200 MFD. *10V.
22-1763	C2	2.2 MMFD. Ceramic 500 V.
		RESISTORS
63-1362	R9,10	Two Section Candohm
63-1562	R8	75 ohm W. W. (Insulated) 2 W.
63-1642	R12	Volume Control
63-1758	R6	220 ohm (Insulated) ½ W.
63-1765	R15	330 ohm (Insulated) ½ W.
63-1778	R16	680 ohm (Insulated) ½ W.
63-1792	R11	1500 ohm (Insulated) ½ W.
63-1799	R18	2200 ohm (Insulated) ½ W.
63-1824	R13	8200 ohm (Insulated) ½ W.
63-1827	R2	10 K ohm (Insulated) ½ W.
63-1856	R5	47 K ohm (Insulated) ½ W.
63-1880	R4	180 K ohm (Insulated) ½ W.
63-1912	R14	1 Megohm (Insulated) ½ W.
63-1926	R7	2.2 Megohm (Insulated) ½ W.
63-1933	R17	3.3 Megohm (Insulated) ½ W.
63-1940	R1	4.7 Megohm (Insulated) ½ W.
63-1954	R3	10 Megohm (Insulated) ½ W.
		MISCELLANEOUS
11-104		Line Cord & Plug - 7 ft
15-51		Plug Cap & Insulator
17-103		Battery Cable Clamp
24-458		Switch Cover
28-23		Cabinet Door (R.H.)
28-24		Cabinet Door (L.H.)
40-74		Door Hinge (4 used)
40-78		Cabinet Rear Cover Hinge (2 used on S-14412)
43-159		Handle End Piece (2 used)
46-731		Door Release Knob
46-732		Tuning & Volume Control Knob (2 used)
49-631	SP-1	P.M. Speaker (5¼") 206-631 Output Transformer 208-631 Cone & Voice Coil
52-475	W1	Wavemagnet Cable
52-476	W2	Wavemagnet Extension Cable
54-30		#8-32 x 5/16" Hex. Nut - Steel - N.P
54-139		#3/8 - 32 x 9/16" Palnut - Cad.
54-141		Tinnerman Speed Nut (used on 52-475)
54-211		Tinnerman Speed Nut (8 used on S-14417)
54-261		Spring Nut (used on 80-600)
54-263		Speed Nut (used on 80-603)
54-267		#6-32 x 5/16" Palnut Steel-N.P.
56-236		Hinge Pin (4 used) (2 on 28-23) (2 on 28-24)
57-1360		Chassis Front Plate
57-1384		Chassis Civer Plate
73-35		#8-32 x 3/16" Hex. Hd. Slotted Set Screw- Cup point
78-274		Socket- Electrolytic Capacitor
78-488		Socket - Loktal Tube
78-543		Socket - Battery Cable (4 Contact)
78-596		Socket - Loktal Tube (or 78-762) (8 Contact)
78-781		Socket - Miniature Tube
78-801		Socket - Octal Tube
78-802		Socket - Wavemagnet Plug (3 Contact)
80-597		Door Release Knob Spring
80-598		Door Catch Spring
80-599		Cover Catch Spring (2 used on S-14412)
80-600		Door Hinge Retaining Spring (2 used on S-14412)
80-601		Lock Lever Spring (Used on S-14424)
80-602		Latch Bar Spring (used on S-14424)
80-603		Wavemagnet Release Spring
80-626		Pressure Spring (2 used on S-14424)
80-629		Link Lever Spring
83-1482		Rubber Strip (Handle)
83-1487		Chassis Insulating Strip
83-1510		Gang Condenser Shield Strip (used with 22-1352)
83-1512		Rubber Strip (Handle)
83-1524		Wavemagnet Cable Spacer Strip
83-1525		Wavemagnet Cable Spacer Strip
83-1531		Cushion Strip
85-311	S1	Butt'ry Change-Over Switch
85-428	S2	D.P.S.T. Switch
		MISCELLANEOUS--Continued
93-35		.032 x .144 x 3/8" Steel Washer - N.P
93-125		#6 Int. Shakeproof Lockwasher #1206
93-126		#8 Int. Shakeproof Lockwasher #1208
93-179		.031 x .140 x 5/16" Steel Washer - Cad. Pl
93-282		Fibre Shoulder Washer
93-321		Fibre Washer (used on 52-475)
93-525		1/16" x .127 x 5/16" Fibre Washer
93-609		.015 x .134 x ¼" Steel Washer - N.P.
93-721		Black Felt Washer (used on 80-603)
93-906		Black Felt Washer (used on 80-603)
93-911		Spring Washer (4 used)
93-912		.010 x 9/64" x 5/16" Steel Washer N.P.
93-913		.020 x .192 x 5/16" Steel Washer - Black Zinc Finish
94-295		Condenser Mounting Bushing
110-131		Grille Cloth
112-713		#4-40 x ¼" Rd. Phillips Hd. M.S. (Lockwasher attached)
112-714		#4 x ¼" Flat Hd. Self Tapping Screw (2 used)
114-26		#8 x ¼" Hex. Hd. Self Tapping Screw (6 used)
114-48		#6-32 x ¼" Hex. Acorn Hd. M.S. - Steel - N.P
114-50		#8-32 x ¼" Hex. Acorn Hd. M.S. - Steel - N.P
114-248		#6-20 x 5/16" Hex. Hd. Slotted Self Tapping Screw (8 used)
114-251		#10-32 x 5/8" Hex. Washer Hd. Slotted M. Screw (2 used)
114-291		#8-32 x 7/16" Hex. Hd. Slotted M.S. - Steel - N.P
114-298		#6-32 x 3/8" Hex. Hd. Slotted M.S. (Lockwasher attached) (4 used)
125-17		Rubber Grommet (3 used)
125-26		Rubber Grommet (4 used)
125-39		Rubber Grommet (2 used)
126-572		Wavemagnet Shield (used on S-14563)
126-573		Tube Shield
139-72		Speaker Baffle
159-49		Snap Button
159-57		Snap Button (2 used on S-14563)
197-18		Rubber Suction Cup (used on S-14563)
197-22		Rubber Suction Cup (used on S-14563)
199-83		Flexible Handle Sleeve
202-589		Instruction Book
212-3	SE-1	Selenium Rectifier
S-14412		Cabinet Frame Assembly
S-14414		Cabinet Door Latch, Release Knob & Spring Assembly
S-14416		Switch Mounting Bracket & Lever Assembly
S-14417		Cabinet Front Cover Assembly
S-14420		Cabinet Rear Cover & Rivet Assembly
S-14421		Handle Strap Assembly
S-14422		Wavemagnet Assembly
S-14424		Cover Strip & Latch Bar Assembly
S-14563		Wavemagnet Shield Assembly

ZENITH RADIO CORP.

MODEL 6MH089, DB47 HUDSON



DIAG #	PART #	DESCRIPTION
C1	22-1462	6PL 250MMF ANTENNA TRIMMER
C2	22-1244	.004 MFD ±10% 600V MICA
C3	22-1376	50MMF NOM 3PL R.F. TRIMMER
C4	22-190	.1MFD. +50% -10% 200V
C5	22-1169	.001 MFD ±20% 600V MICA
C6	22-1136	250MMF ±10% 600V MICA
C7	22-1377	50MMF NOM 3PL CONV TRIMMER
C8	22-182	100MMF +50% -20% 600V MICA
C9	22-1418	350MMF ±2% COMPENSATOR
C10	22-1378	50 MMF NOM 3PL OSC TRIMMER
C11	22-162	100MMF +50% -20% 600V MICA
C12	22-250	.05MFD +50% -10% 200V
C13	22-170	.1 MFD +50% -10% 400V
C14	22-906	.005 MFD +20% -10% 200V
C15	22-376	.005MFD +20% -10% 200V
C16	22-180	.003MFD +20% -10% 200V
C17	22-182	250MMF ±20% 600V MICA
C18	22-1170	.01 MFD ±20% 600V
C19	22-838	.005MFD +50% -10% 600V.
C20	22-1387	20 MFD. 25 W.V. ELECTROLYTIC
C21	22-1387	10 MFD 300 W.V. ELECTROLYTIC △
C22	22-1387	20 MFD 350 W.V. ELECTROLYTIC □
C23	22-908	.5 MFD +50% -10% 120V
C24	22-1448	.008MFD +20% -10% 1600V
C25	27-87	500MMF SPARK PLATE
C26	27-87	500MMF SPARK PLATE
C27	22-908	.5 MFD +50% -10% 120V
L1	S-8819	ANTENNA MOTOR NOISE CHOKE
L2	S-12080A	ANT. TUNING COIL (TUNING UNIT)
L3	COLOR OF DOT	R.F. TUNING COIL (TUNING UNIT)
L4	COLOR OF DOT	CONV TUNING COIL (TUNING UNIT)
L5	S-12053B	OSC. TUNING COIL (TUNING UNIT)
L6	S-10829	SOLENOID (PART OF TUNING UNIT)
L7	S-11229	OSC SERIES COIL
L8	S-11231	OSC SHUNT COIL
L9	S-11232	MOTOR NOISE CHOKE
L10	20-213	HASH CHOKE
SP1	49-584	SPEAKER & PLUG
SK1	52-279	SPEAKER CABLE & SOCKET

DIAG #	PART #	DESCRIPTION
R1	63-1392	330 000 OHMS ±20% ¼W
R2	63-1379	0-800 Ω ±10% SENS. CONTROL
R3	63-1411	18 000 OHMS ±10% ½W
R4	63-1392	330 000 OHMS ±20% ¼W
R5	63-1396	68 000 OHMS ±10% ¼W
R6	63-1413	10 MEGOHMS ±10% ¼W
R7	63-1401	15 000 OHMS ±20% ½W
R8	63-1398	33 000 OHMS ±10% 1W
R9	63-1390	1 MEGOHM ±20% ¼W
R10	63-1391	33 000 OHMS ±20% (IN 2 I.F.) ¼W
R11	63-1392	330 000 OHMS ±20% ¼W
R12	63-1392	330 000 OHMS ±20% ¼W
R13	63-1389	270 OHMS ±10% (W.W) 1W
R14	63-1400	15 MEGOHM ±20% ¼W
R15	63-1395	22 000 OHMS ±10% ¼W
R16	63-1399	82 OHMS ±10% ½W
R17	63-1399	82 OHMS ±10% ½W
R18	63-1388	1800 OHMS ±10% (W.W) 2W
R19	63-1535	250M Ω SET VOL CONT (TAP AT 75M Ω)
R20	63-1539	1.5MEG TONE CONTROL
R21	63-1414	100 OHMS ±10% ½W
R22	63-1410	120 OHMS ±10% ½W
R23	63-1417	47 000 OHMS ±10% ¼W
T1	95-918	FIRST I.F. TRANSFORMER
T2	95-942	2ND I.F. TRANSFORMER
T3	95-915	OUTPUT TRANSFORMER
T4	95-1013	VIBRATOR POWER TRANSFORMER
T4	95-914	VIBRATOR POWER TRANS (ALTERNATE)
FS1	S-11140	FOOT SWITCH & PLATE ASSEMBLY
FS2	78-646	FOOT SWITCH CONTROL SOCKET
FS3	S-13246	FOOT CONTROL SWITCH, CABLE (& PLUG ASSEMBLY
S1	S-11272	HAND SELECTOR & MUTING SWITCH
S2	85-839	ON-OFF SWITCH
S3	100-32	TYPE NO 51 PILOT LAMP
S4	136-14	10AMP. FUSE TYPE MDL-10
V1	190-20	VIBRATOR (NON SYNCHRONOUS)

ALL CONDENSERS ARE MMFD. UNLESS OTHERWISE SPECIFIED

ON ALL CONDENSERS —

Ⓐ = 25 VOLTS Ⓑ = 120 VOLTS Ⓒ = 200 VOLTS
Ⓓ = 300 VOLTS Ⓔ = 350 VOLTS Ⓕ = 400 VOLTS
Ⓖ = 500 VOLTS Ⓗ = 600 VOLTS Ⓙ = 1600 VOLTS

FOR RESISTORS: M = 1000 Ω E.G. 10M = 10 000 Ω
ALL RESISTORS ARE ¼ WATT & ± 20% UNLESS OTHERWISE SPECIFIED

⏚ = DESIGNATES CHASSIS GROUND

ALL TUBE SOCKETS ARE BOTTOM VIEWS

STAGE GAINS

TAKEN AT ANT. SOCKET AT R.F. GRID AT 600KC & TAKEN AT CONV. GRID AT 285KC.

DUMMY ANTENNA

MMFD SERIES & MMFD. SHUNT AT ANT SOCKET & 0.1MFD SERIES TO CONVERTER GRID

BATTERY CONDITIONS

6.3 VOLTS AT STORAGE BATTERY TERMINALS WITH POSITIVE GROUNDED

TEST CONDITIONS

VOL. CONTROL SET AT "MAX" TONE CONTROL SET ON "HIGH", WITH NO INCOMING SIGNAL

VOLTAGES READ FROM POINT SHOWN TO CHASSIS WITH 1000 OHM PER VOLT METER

I.F. 265 KC
TUNING RANGE 540KC. TO 1600KC.

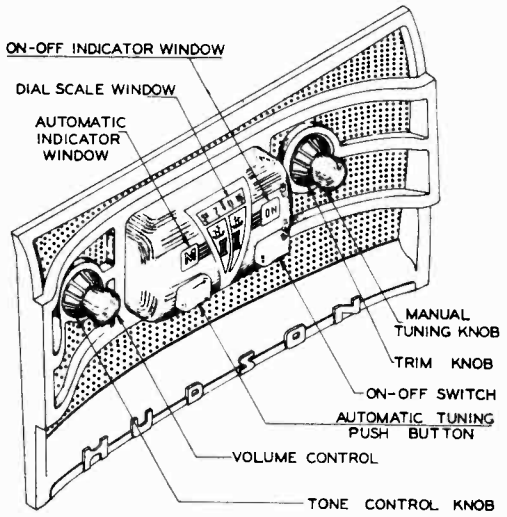
Automatic Tuning

There are five automatic tuning positions which may be adjusted to five desired stations. If these positions have not been previously adjusted proceed as follows:

1. Press the automatic tuning push button (on the left side) until Number 1 appears in the automatic indicator window.
2. Pull the manual tuning knob OUTWARD to engage the automatic mechanism.
3. Select the station desired and tune to its frequency by turning the tuning knob. Tune very carefully for clearest reception.

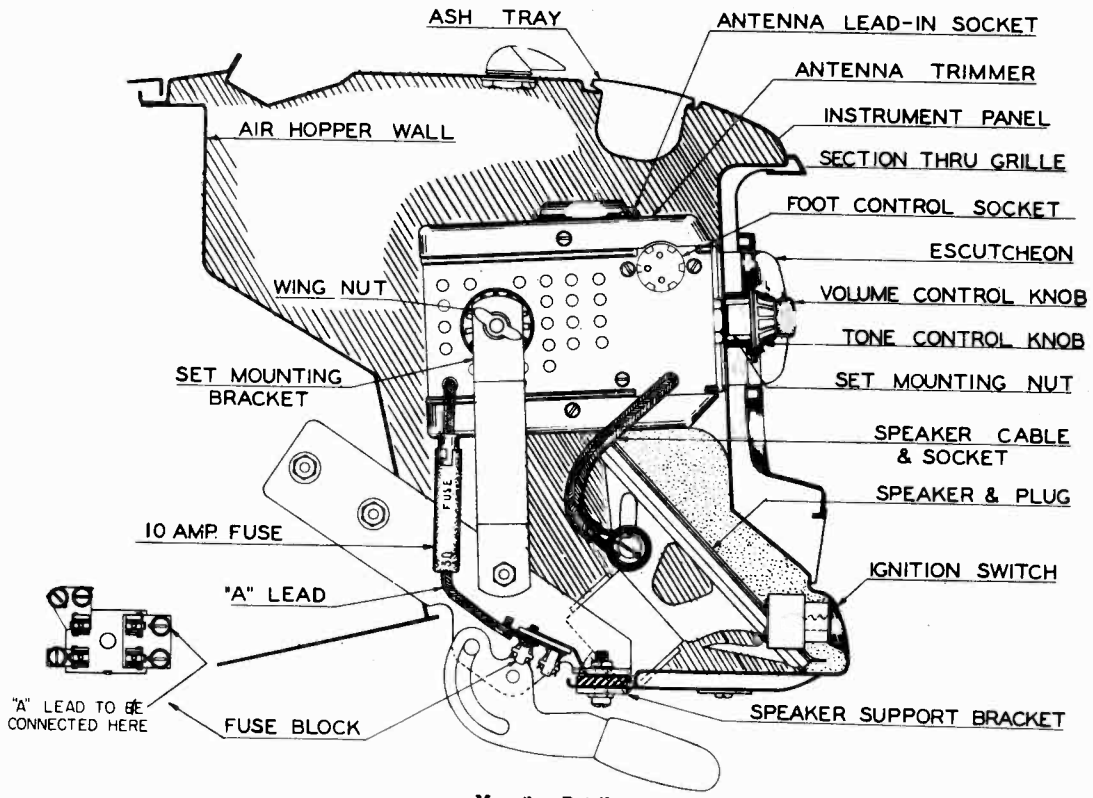
   CAUTION: DO NOT ATTEMPT TO FORCE THE KNOB IN. The knob will automatically return to the "IN" position when the automatic tuning push button or the foot switch is operated.
4. Press the automatic tuning push button, pull manual tuning knob outward, and tune in station desired for No. 2 position. Use the same procedure for positions No. 3, 4 and 5.

When the five automatic positions have been adjusted to the five desired stations as instructed, it is only necessary to press the AUTOMATIC button to return to MANUAL tuning, or to any one of the stations selected on the Automatic.



Operating Controls.

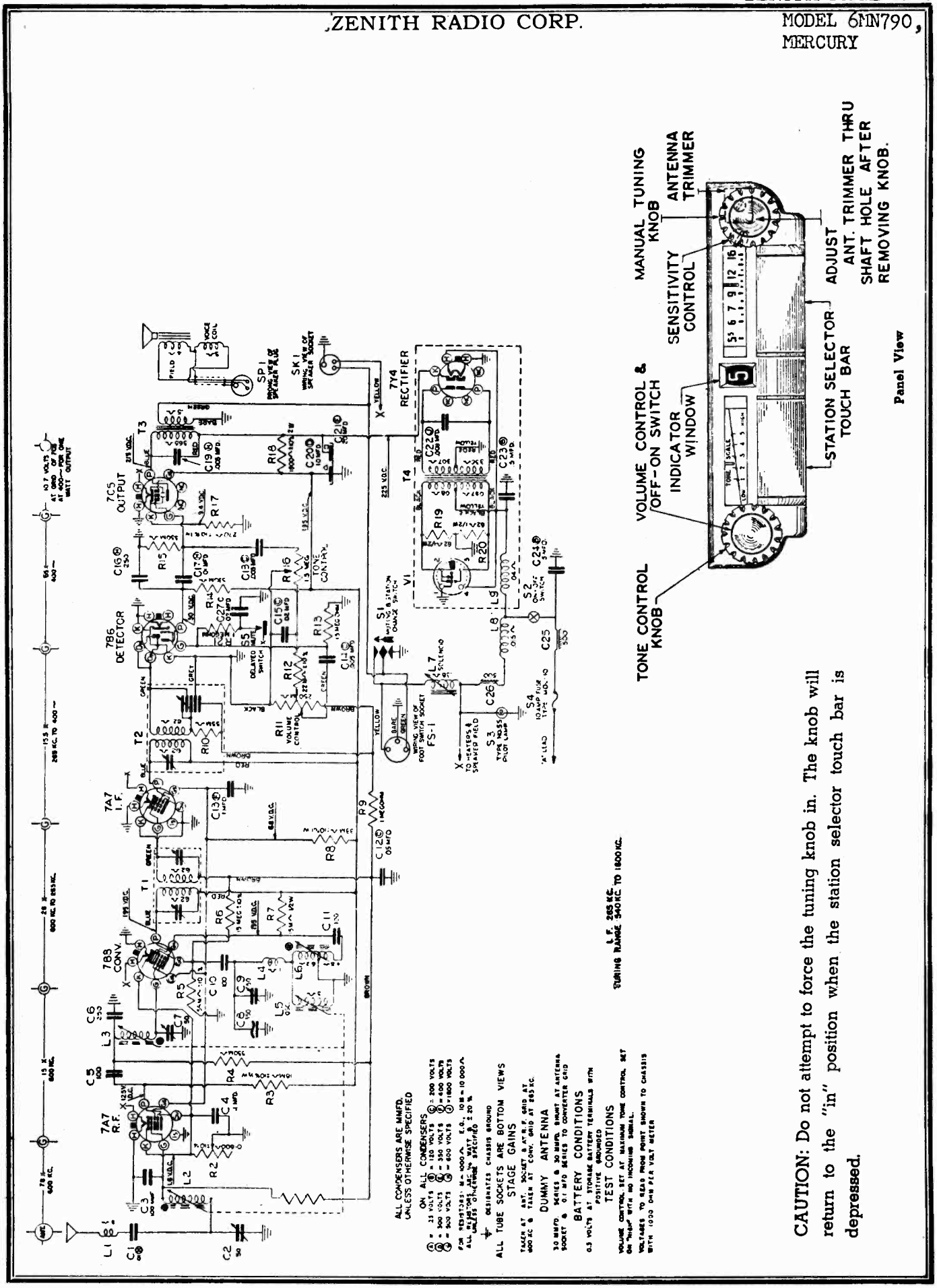
INSTALLATION INSTRUCTIONS



Mounting Details and Connections

ZENITH RADIO CORP.

MODEL 6MN790, MERCURY



CAUTION: Do not attempt to force the tuning knob in. The knob will return to the "in" position when the station selector touch bar is depressed.

Setting The Adjust-O-Matic Tuning

Pressing the station selector touch-bar six times will cause the tuning mechanism to change through a cycle of six positions. Five of these Adjust-O-Matic positions, at which numbers appear in the station indicator window, may be set for five favorite local stations while the sixth position, at which the letter M appears in the station indicator window, may be used for selecting stations manually.

The five positions, at which numbers appear in the station indicator window, may be adjusted in succession to any desired dial settings. However, in order to simplify the identification of the stations, it is advisable to set the Adjust-O-Matic mechanism in sequence according to frequencies of the stations, beginning with the station broadcasting on the lowest frequency, and progressing to the station broadcasting on the highest frequency.

Turn the receiver on and allow it to operate for at least fifteen minutes in order for each part to reach normal operating temperature before making the following Adjust-O-Matic settings:

1—Press the station selector touch bar repeatedly until No. 1 appears in the station indicator window.

2—Pull the manual tuning knob outward engaging the Adjust-O-Matic mechanism with the dial. (Fig. 1.)

3—Select the station desired and tune it in by turning the tuning knob in the same manner as when tuning the radio manually. Tune very carefully for clearest reception.

CAUTION: Do not attempt to force the tuning knob in. The knob will return to the "in" position when the station selector touch bar is again depressed.

4—Press the station selector touch bar, pull the manual tuning knob outward, and tune in the station desired for No. 2 position. Use the same procedure for adjusting positions Nos. 3, 4, and 5.

When the five positions have been adjusted to the five desired stations, it is only necessary to press the station selector touch bar to return to manual tuning or to any one of the stations on the Adjust-O-Matic.

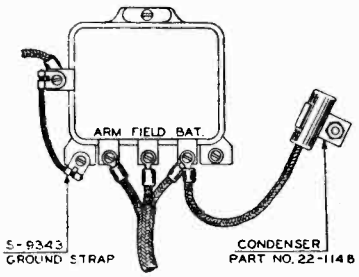
NOTE: When the letter M appears in the station indicator window, the manual tuning knob must be pulled outward and turned in order to select stations manually.

Interference Elimination

Important

Use the utmost care in the following operations to insure freedom from interference. Clean away paint and dirt to make good contacts between condensers and the car. Tighten all bolts and nuts securely.

1—Install a condenser, Part No. 22-1148, and a ground strap, Part No. S-9343, on the voltage regulator (Fig. 4.)



CONDENSER ON VOLT. REGULATOR

Fig. 4

2—Mount a condenser, Part No. 22-1326, on the ignition coil and connect the lead to the battery terminal (Fig. 5.)

3—Cut the high tension wire, that runs from the ignition coil to the distributor, three quarters of an inch from the point where it enters the soft rubber high tension wire housing. Shorten the wire one inch. Remove the wire from the coil, and screw the suppressor into the wire ends (Fig. 6). Replace the wire in the coil.

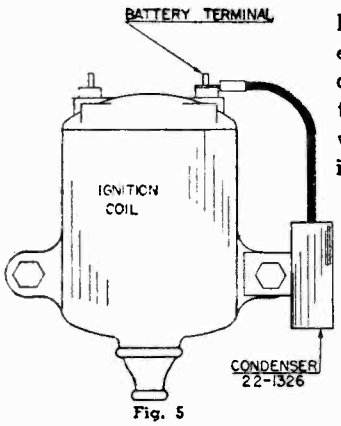


Fig. 5

If ignition interference is still present, check to make sure that the inside center windshield trim strip is grounded to the car body, and does not touch the antenna roof tube nut. Be certain the antenna wing nut and all the instrument panel bolts are tight.

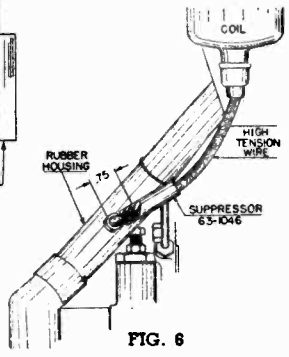


FIG. 6

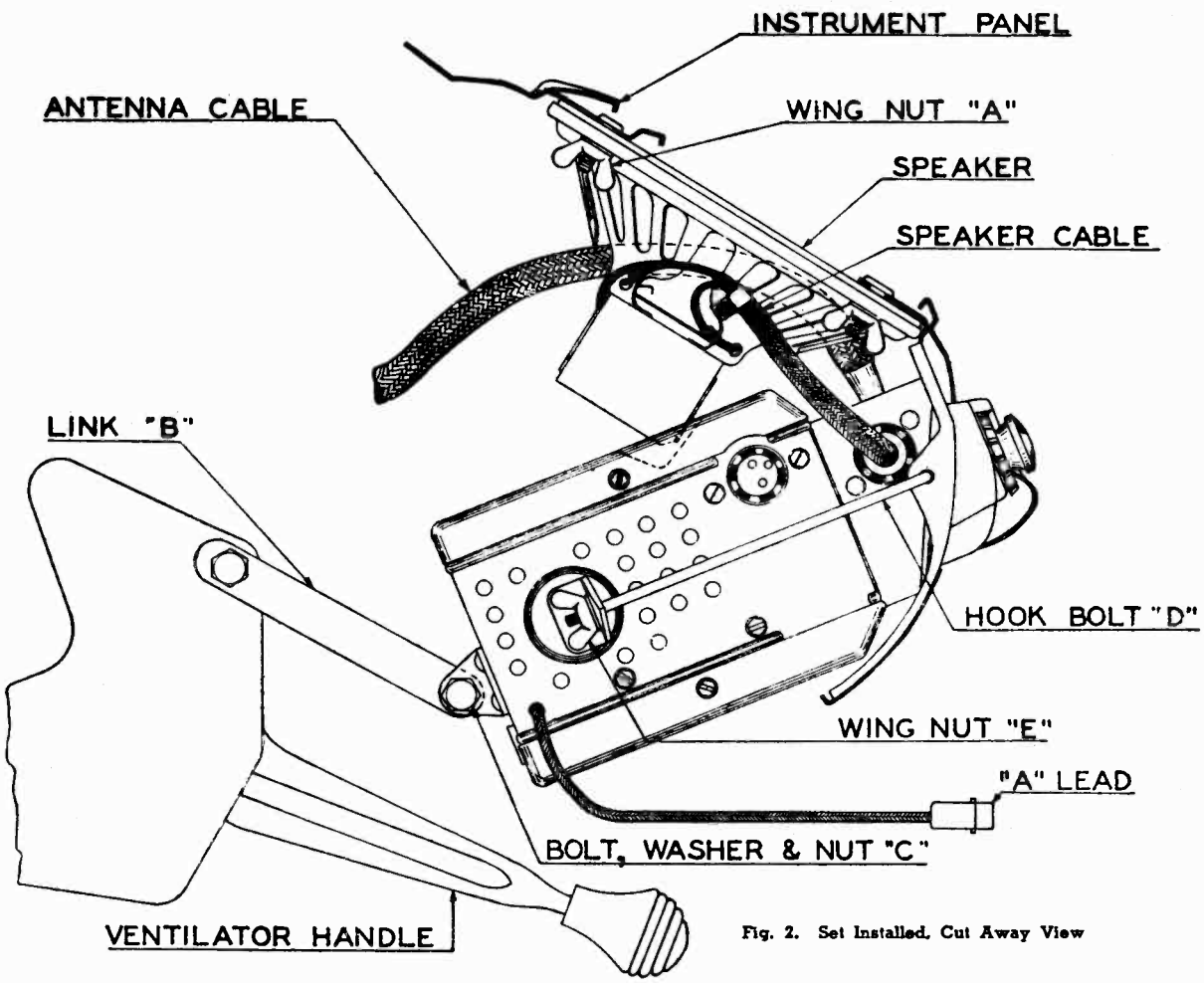


Fig. 2. Set Installed, Cut Away View

1—Install the antenna and antenna cable. Complete installation instructions are packed with each antenna kit.

2—Remove the radio opening cover plate from the instrument panel.

3—Place the speaker over the studs on the rear of the instrument panel, with the cable to the left. Fasten securely with the four wing nuts No. 54-189, furnished in the installation kit.

4—Start the wing nuts "E" on the hook bolts "D" (Fig. 2). Place the receiver in position. Slip the end of the hook bolts through the receiver brackets with the hooks turned toward the center. Hook the bolts in the holes provided on the instrument panel. Tighten the wing nuts sufficiently to hold the receiver in place while the supporting link "B" is connected between the rear hanger bracket of the receiver and the ventilator bracket of the car, with bolts, lock-washers and nuts ("C." Fig. 2.)

5—Tighten all nuts and bolts to hold the receiver firmly in place.

6—Connect "A" lead to circuit breaker. (Fig. 3.)

7—Connect the speaker cable and antenna lead to the receiver.

8—IMPORTANT: Turn the receiver on and allow it to operate for approximately fifteen minutes in order for each part to reach normal operating temperature. Tune in a weak station near 1200 Kc. With a small screwdriver adjust the antenna trimmer (Fig. 1), for maximum volume.

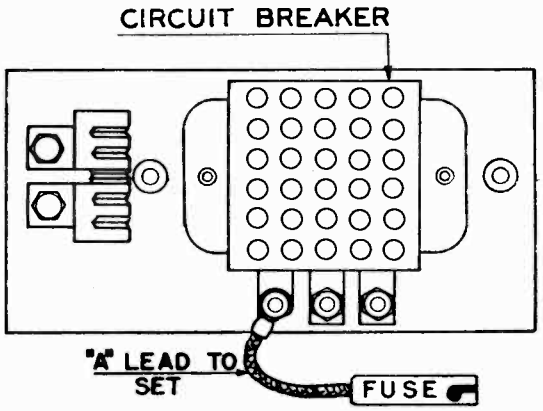
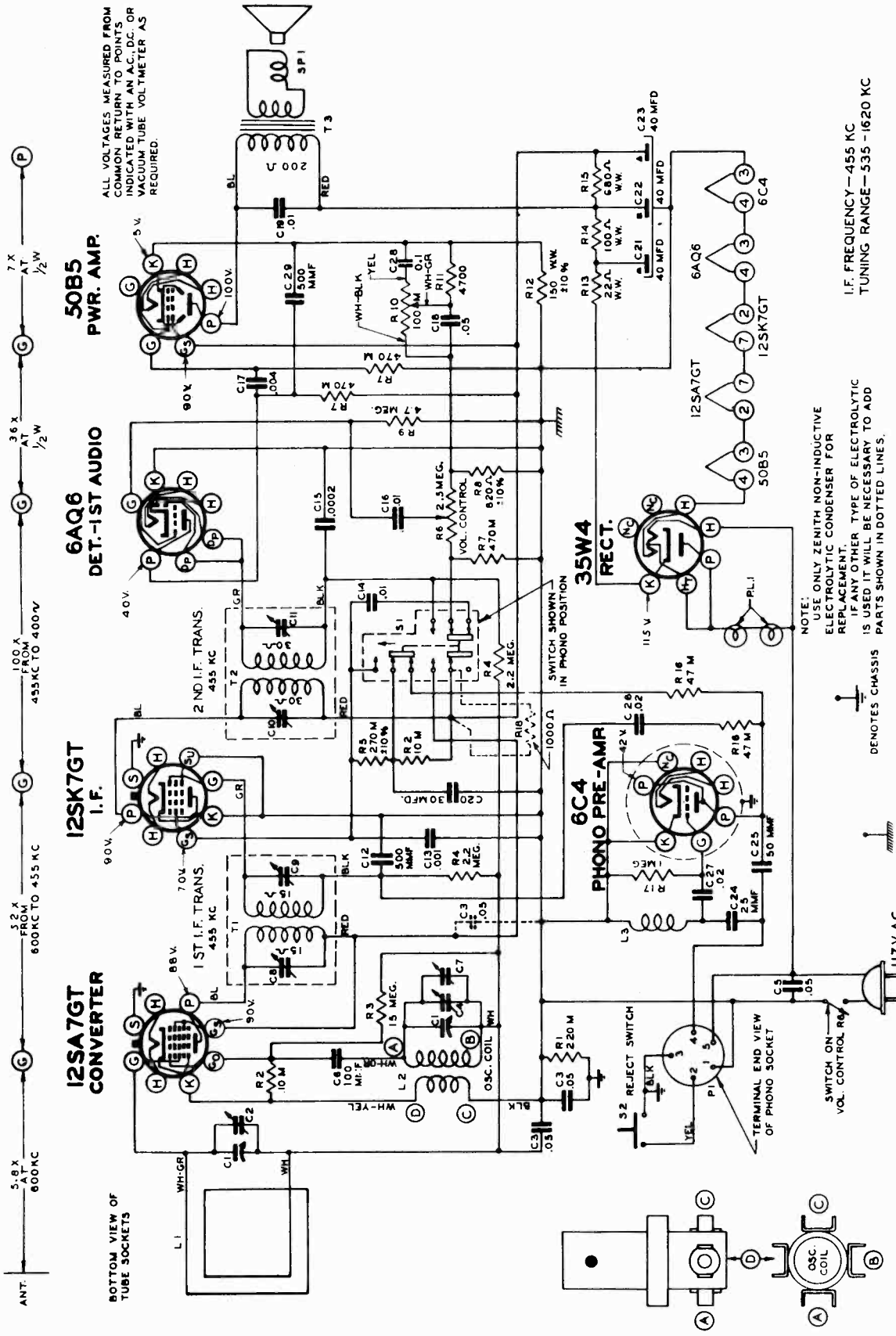
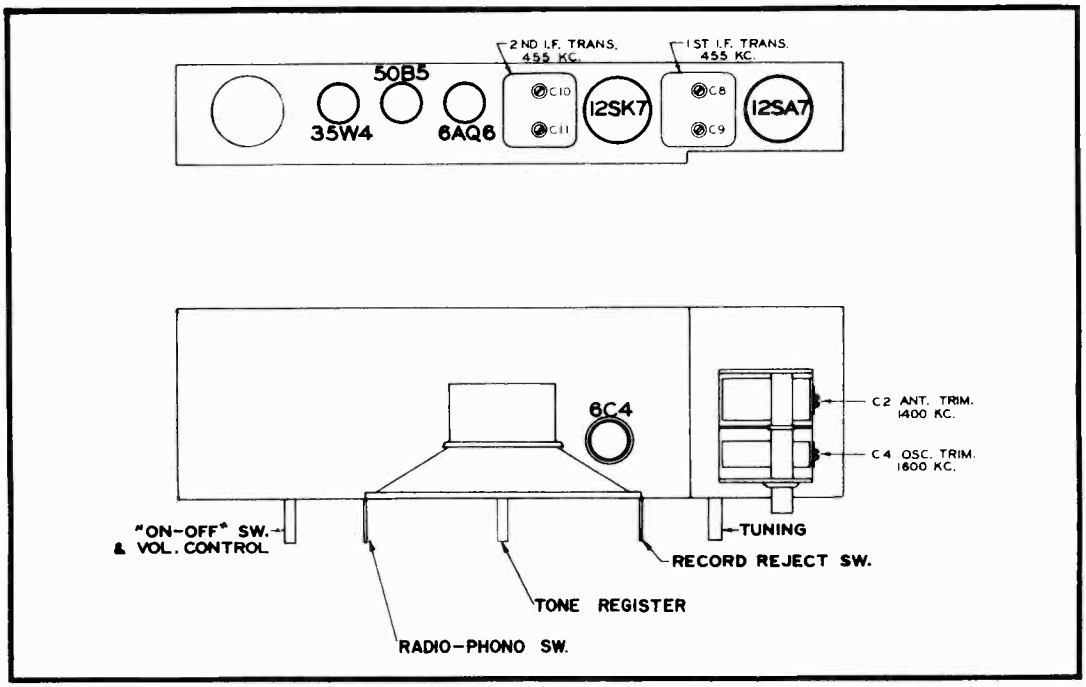


Fig. 3

MODEL 6R880,
CHASSIS 6E03

ZENITH RADIO CORP.





TUBE AND TRIMMER LOCATION

The alignment of chassis 6E03 is conventional, however the adjustments interlock to some degree, therefore, the procedure must be followed exactly. Since this chassis is of the AC/DC type, care must be exercised when making measurements. Chassis 6E03 has a phono-radio push button switch of the double acting type. When in the "In" position this connects the radio for playing records. Socket P1 is used to connect the changer to the receiver chassis.

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 MFD	455 Kc.	600 Kc.	C8, C9, C10, C11	Align I.F.
2	Single Turn Loop Loosely Coupled to Wavemagnet	-------	1600 Kc.	1600 Kc.	C4	Set Oscillator to Dial Scale.
3		-------	1400 Kc.	1400 Kc.	C2	Align Antenna.

PARTS LIST

MISCELLANEOUS

2-135		Cabinet Back
2-136		Cabinet Back (6R880GO only)
11-104		Line Cord Plug - 7 ft.
12-1468		Tone Control Mounting Bracket
12-1486		Shield Support Bracket
19-123		Record Changer Mounting Clip (4 used)
46-687		Tuning & Volume Control Knob
46-688		Tone Control Knob
46-689		Phono Switch Knob
49-602	SP-1	P. M. Speaker (5 1/4")
		208-602 Cone & Voice Coil
54-30		#8-32 X 5/16" Hex Nut Steel N.P. (2 used)
54-139		#3/8 - 32 X 9/16" Palnut Type 9N -Steel Cad. (2 used)
54-143		Speed Nut
54-228		Speed Nut (Used on 26-387)
54-267		#6-32 X 5/16" Hex Palnut - Inverted Type (4 used)
57-1105		Wavemagnet Lead Spacer Strip
57-1398		Dial Escutcheon
57-1402		Chassis Cover Plate
70-117		#6 X 5/16" Phillips Rd. Hd. Wood Screw-Steel - Statuary Bronze (7 used)
70-128		#5 X 3/8" Washer Hd. Wood Screw-Steel-Statuary Bronze (6 used) (Cabinet Back Mtg.)
72-74		#4 X 3/8" Phillips Flat Hd Wood Screw-Steel Brass Plate (Escutcheon Mtg.)
78-274		Socket - Electrolytic Capacitor
78-436		Socket - Miniature Tube
78-792	P-1	Socket - Phono (5 contact)
78-793		Socket - Octal Tube (2 used)
78-794		Socket Miniature Tube (7 contact)
78-795		Socket - Miniature Tube (7 contact) (2 used)
80-407		Record Changer Mounting Spring (4 used)
84-70		Tone Arm Support
85-421	S-1	Phono - Radio Switch (or 85-438)
85-422	S-2	Reject Switch
93-125		#6 Int. Shakeproof Lockwasher (4 used)
93-126		#8 Int. Shakeproof Lockwasher (2 used)
93-721		Felt Washer (2 used)
94-295		Capacitor Mounting Bushing (5 used)
95-1025	T-3	Output Transformer
110-129		Grille Cloth
112-544		Record Changer Mounting Screw (4 used)
112-721		#6 X 7/16" Straight Binding Hd. Wood Screw Steel Statuary Bronze (8 used)
114-58		#6-32 X 3/8" Hex Acorn Hd. M.S. Steel N.P. (2 used)
114-67		#6-32 x 7/16" Hex Acorn Hd. M. S. Steel N.P. (3 used)
114-128		#10 X 1 1/16" Hex Washer Hd. Self Tapping Screw
114-217		#8 X 1/4" Hex Hd. Slotted Self Tapping Screw-Cad (9 used)
114-291		#8-32 X 7/16" Hex Hd. Slotted M. Screw - Steel N.P.
125-17		Rubber Grommet (5 used)
125-66		Rubber Grommet (2 used)
139-71		Speaker Baffle
166-44		Rubber Bumper (or 166-41)
202-662		Instruction Book (Phono & Chassis)
S-14958	L-1	Wavemagnet Assembly - Type 26 FR
S-14007		Non-Intermixer Record Changer
S-14657		Hinge Assembly

DIAL ASSEMBLY

12-1383		Dial Light Bracket (2 used)
26-387		Dial Scale
76-492		Tuning Control Shaft
78-769		Dual Dial Light Socket & Wire
80-69		Dial Cord Tension Spring
80-209		Dial Cord Tension Spring
97-284		Dial Cord Guide Stud
100-90	PL-1	Dial Light Bulb (2 used)
188-32		Retaining Ring
188-34		Retaining Ring
S-13827		Dial Cord Assembly (Short)
S-13828		Dial Cord Assembly (Long)
S-13830		Tuning Pulley & Bushing Assembly
S-14667		Dial Pointer & Pulley Assembly (59-214)

COIL & CHOKES

95-906	T-2	2nd I. F. Transformer
95-919	T-1	1st I. F. Transformer
S-12603	L-3	Phono Oscillator Coil Assembly (FM-Phono)
S-13799	L-2	Oscillator Coil Assembly

CONDENSERS

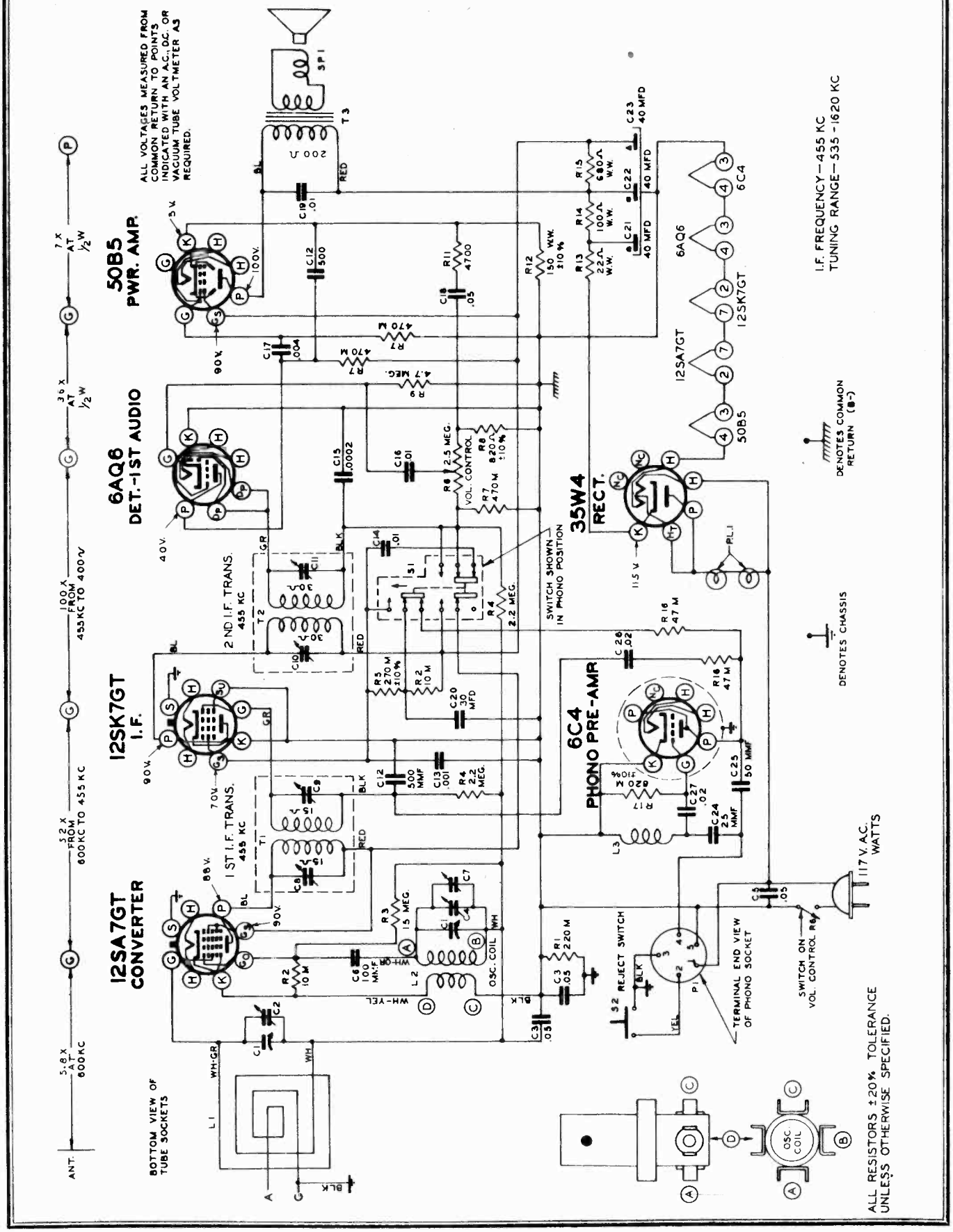
22-162	C-6	.0001 MFD (or 22-1669)	500 V.
22-178	C-18	.05 MFD	200 V.
22-188	C-26	.02 MFD	400 V.
22-196	C-16	.01 MFD	600 V.
22-243	C-14	.01 MFD	400 V.
22-327	C-27	.02 MFD	200 V.
22-448	C-17	.004 MFD	600 V.
22-716	C-29	.0005 MFD	500 V.
22-827	C-28	.1 MFD	200 V.
22-829	C-3	.05 MFD	200 V.
22-854	C-12	.0005 MFD	600 V.
22-953	C-15	.0002 MFD (or 22-1668)	500 V.
22-1017	C-5	.05 MFD	400 V.
22-1182	C-19	.01 MFD	400 V.
22-1444	C-13	.001 MFD	200 V.
22-1532	C-25	50 MMFD (or 22-1674)	500 V.
22-1657	C-1	Two Gang Variable	
22-1707	C20,21,22,23	Dry Electrolytic 40-40-40-30 MFD	150 V.
22-1758	C-24	25 MMFD Ceramic	500 V.

RESISTORS

63-686	R-12	150 ohm W. W.		$\frac{1}{2}$ W.
63-1219	R-13	22 ohm W. W.		$\frac{1}{2}$ W.
63-1220	R-14	100 ohm W. W.		1 W.
63-1221	R-15	680 ohm W. W.		1 W.
63-1555	R-6	Volume Control & Switch		
63-1653	R-10	Tone Control		
63-1782	R-8	820 ohm	(Insulated)	$\frac{1}{2}$ W.
63-1814	R-11	4700 ohm	(Insulated)	$\frac{1}{2}$ W.
63-1828	R-2	10 M ohm	(Insulated)	$\frac{1}{2}$ W.
63-1856	R-16	47 M ohm	(Insulated)	$\frac{1}{2}$ W.
63-1884	R-1	220 M ohm	(Insulated)	$\frac{1}{2}$ W.
63-1887	R-5	270 M ohm	(Insulated)	$\frac{1}{2}$ W.
63-1898	R-7	470 M ohm	(Insulated)	$\frac{1}{2}$ W.
63-1911	R-17	1 Megohm	(Insulated)	$\frac{1}{2}$ W.
63-1926	R-4	2.2 Megohm	(Insulated)	$\frac{1}{2}$ W.
63-1940	R-9	4.7 Megohm	(Insulated)	$\frac{1}{2}$ W.
63-1961	R-3	15 Megohm	(Insulated)	$\frac{1}{2}$ W.

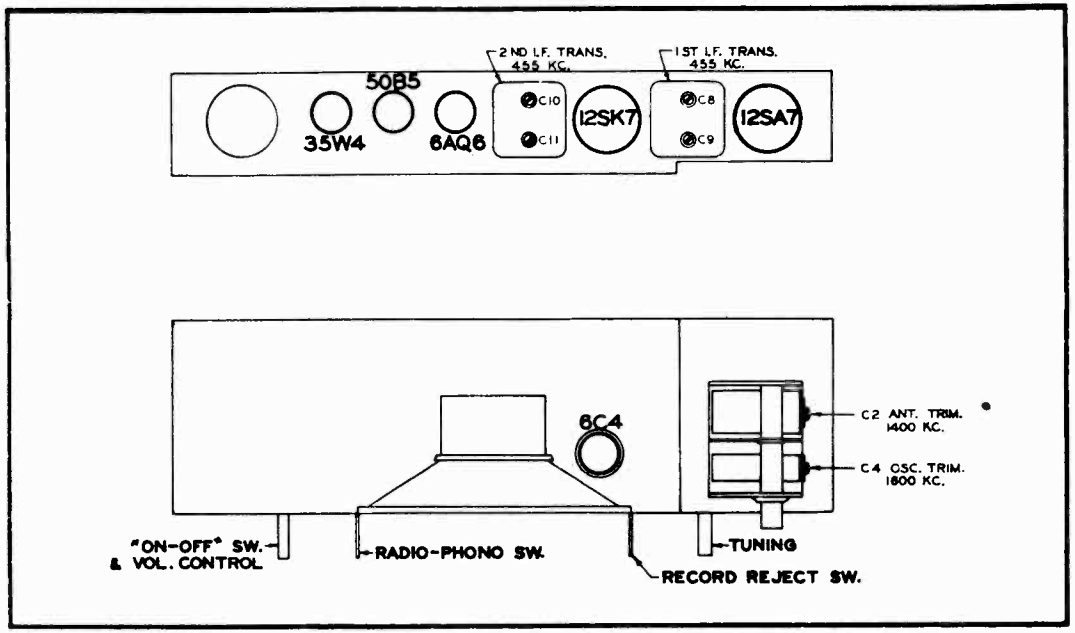
ZENITH RADIO CORP.

MODEL 6R886,
CHASSIS 6E02



PARTS LIST

REFERENCE NUMBER	DIAGRAM NUMBER	DESCRIPTION
		CONDENSERS
22-1657	C1	2-Gang Variable
ON C1	C2	Bc. Ant. Trim
22-829	C3	.05 Mfd .200 V.
ON C1	C4	Bc. Osc. Trimmer.
22-1017	C5	.05 Mfd .400 V.
22-162	C6	100 Mmfd. .500 V.
ON C1	C7	Bc. Osc. Trim
ON T1	C8	1st. I.F. Trans. Pri. Trim.
ON T1	C9	1st. IJF. Trans. Sec. Trim.
ON T2	C10	2nd. I.F. Trans. Pri. Trim.
ON T2	C11	2nd. I.F. Trans. Sec. Trim.
22-716	C12	.0005 Mfd .500 V.
22-1444	C13	.001 Mfd. .200 V.
22-243	C14	.01 Mfd .400 V.
22-953	C15	.0002 Mfd .600 V.
22-196	C16	.01 Mfd .600 V.
22-448	C17	.004 Mfd. .600 V.
22-178	C18	.05 Mfd .200 V.
22-1182	C19	.01 Mfd .400 V.
	C20	30 Mfd. Electro .150 V.
	C21	40 Mfd. Electro .150 V.
22-1707	C22	40 Mfd. Electro .150 V.
	C23	40 Mfd. Electro .150 V.
22-127	C24	25 Mmfd .500 V.
22-1532	C25	50 Mmfd .500 V.
22-188	C26	.02 Mfd .400 V.
22-327	C27	.02 Mfd .200 V.
		RESISTORS
63-1884	R1	220 M Ohm .1/2 W.
63-1828	R2	10 M Ohm. .1/2 W.
63-1961	R3	15 Megohm .1/2 W.
63-1926	R4	2.2 Megohm. .1/2 W.
63-1887	R5	270 M Ohm .1/2 W.
63-1555	R6	2.5 Meg. Vol. Control
63-1898	R7	470 M Ohm .1/2 W.
63-1782	R8	820 Ohm .1/2 W.
63-1940	R9	4.7 Megohm. .1/2 W.
63-1814	R11	4700 Ohm. .1/2 W.
63-686	R12	150 Ohm W. W. .1/2 W.
63-1219	R13	22 Ohm W. W .1/2 W.
63-1220	R14	100 Ohm W. W. 1 W.
63-1221	R15	680 Ohm W. W. 1 W.
63-1856	R16	47 M Ohm. .1/2 W.
63-1908	R17	820 M Ohm .1/2 W.
		COILS
S13817	L1	Wavemagnet Assem.
S13799	L2	Osc. Coil Assem
S12603	L3	Osc. Coil Assem
95-919	T1	1st. I.F. Trans
95-906	T2	2nd. I.F. Trans
95-1025	T3	Output Trans.
		MISCELLANEOUS
100-90	P.L.1	Pilot Light 3.2 V
78-592	P1	5 Prong Phono Socket.
86-421	S1	Phono-Radio Switch.
85-422	S2	Reject Switch
49-602	SP1	5-1/4" P.M. Speaker
S13815		Hinge Assembly.
S13829		Dial Pointer and Pulley Assembly.
S14196		Escutcheon and Grille Cloth Assembly.
2-122		Cabinet Back.
13-1382		Hinge Support Bracket
14-1086		Table Cabinet
26-387		Dial Scale.
27-99		Felt Disc
46-687		Tuning Control Knob
46-689		Phono Switch Knob
57-1105		Wavemagnet Lead Spacer Strip.
57-1320		Chassis Cover Plate
80-407		Record Changer Mounting Spring.
80-569		Dial Scale Retaining Spring
110-129		Grille Cloth.
112-544		Record Changer Mounting Screw
139-71		Speaker Baffle.
166-13		Rubber Bumper



TUBE AND TRIMMER LOCATION

TO THE SERVICEMAN:

Chassis 6E02 has a Record Reject push button switch on the receiver control panel to reject records.

The socket P1 is used to connect the automatic record changer to the receiver. The record player is connected to the receiver by a shielded cable and socket arrangement.

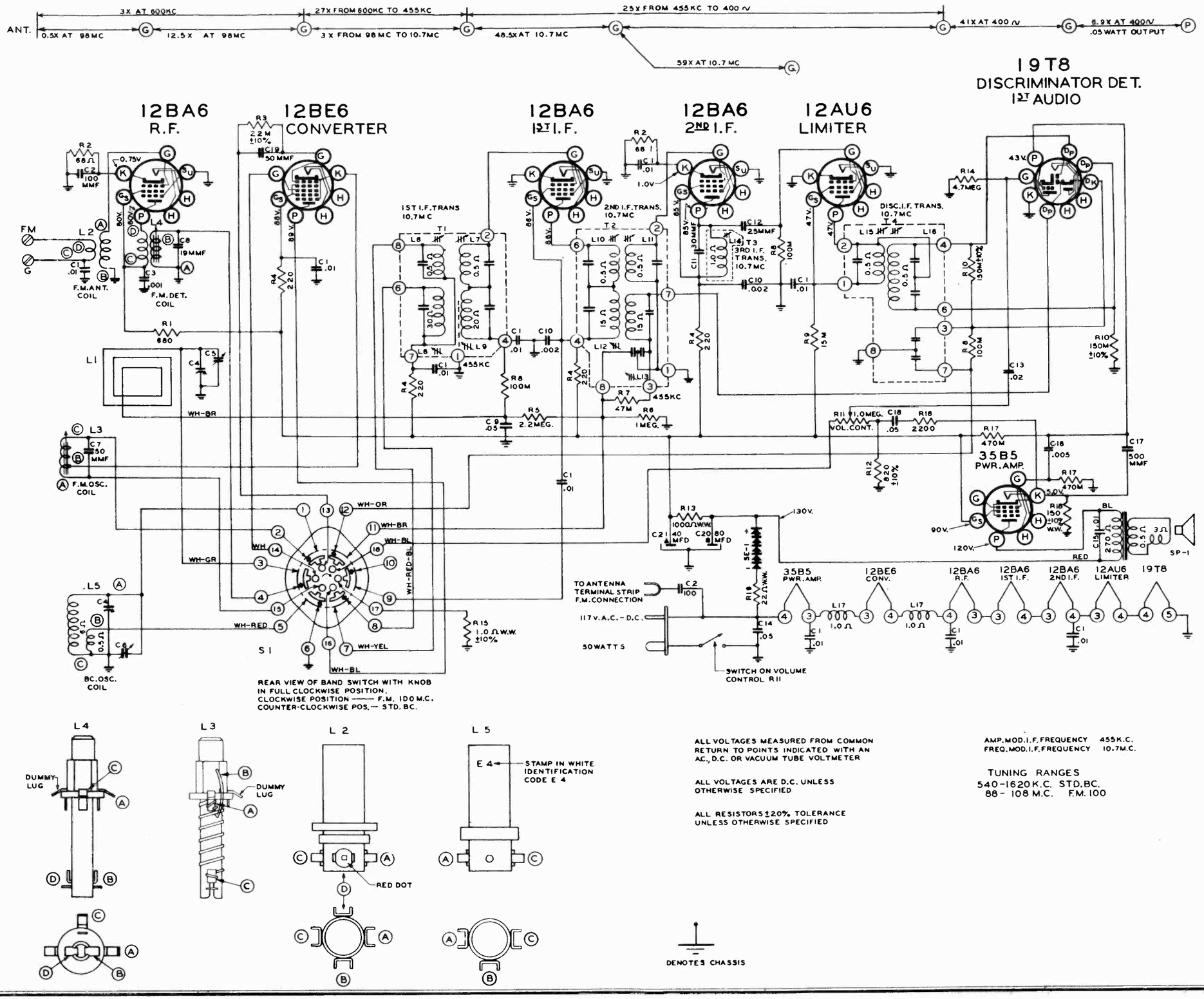
The Phono-Radio switch is a two position double acting push-button switch and when in the "in" position connects the changer for playing records.

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 MFD	455 Kc.	1600 Kc.	C8, C9, C10, C11	Align I.F.
2	Single Turn Loop Loosely Coupled to Wavemagnet	------	1600 Kc.	1600 Kc.	C4	Set Oscillator to Dial Scale.
3		------	1400 Kc.	1400 Kc.	C2	Align Antenna.

ZENITH RADIO CORP.

MODEL 7H822,
CHASSIS 7E02



ALL VOLTAGES MEASURED FROM COMMON RETURN TO POINTS INDICATED WITH AN A.C., D.C. OR VACUUM TUBE VOLTMETER

ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED

ALL RESISTORS ±20% TOLERANCE UNLESS OTHERWISE SPECIFIED

DENOTES CHASSIS

AMP. MOD. I.F. FREQUENCY 455K.C.
FREQ. MOD. I.F. FREQUENCY 10.7M.C.

TUNING RANGES
540-1620K.C. STD. BC.
88 - 108 M.C. F.M. 100

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial To	Adj. Trimmers	Purpose
1	Pin 7 12BE6 Converter	.05 Mfd.	455 KC. Modulated	BC	600 Kc.	L8, 9, 12, 13	Align I. F. channel for maximum output.
2	2 turns loosely cpld. to wavemagnet		1600 Kc. Modulated	BC	1600 Kc.	C6	Set oscillator to dial scale.
3	2 turns loosely cpld. to wavemagnet		1400 Kc. Modulated	BC	1400 Kc.	C5	Align antenna stage.
4 (a)	Pin 1 (grid) on 12AU6 limiter.	.05 Mfd.	10.7 Mc. Unmodulated	FM 100		L15 coil slug Primary discr.	Align primary of discriminator for maximum reading.
5 (b)	Pin 1 (grid) on 12AU6 limiter.	.05 Mfd.	10.7 Mc. Unmodulated	FM 100		L16 coil slug sec. of discr.	Adjust secondary of discriminator for zero reading.
6 (c)	Pin 1 (grid) on 12BA6 2nd IF.	.05 Mfd.	10.7 Mc. Unmodulated	FM 100		L14 Prim. of 3rd IF trans.	Align 3rd IF transformer for maximum reading.
7 (c)	Pin 1 (grid) on 12BA6 1st IF.	.05 Mfd.	10.7 Mc. Unmodulated	FM 100		L10 and L11 Prim. and Sec. of 2nd IF transformer	Align 2nd IF transformer for maximum reading.
8 (c)	Pin 7 (grid) on 12BE6 converter tube socket.	.05 Mfd.	10.7 Mc. Unmodulated	FM 100		L6 and L7 Prim. and Sec. of 1st IF transformer.	Align 1st IF transformer for maximum reading.
9 (c)	Antenna Post FM (Remove line ant.)	270 ohms	98 Mc. Unmodulated	FM 100	98 Mc.	L3 Osc. Coil Slug	Set Oscillator to dial scale.
10 (c) (d)		270 ohms	98 Mc. Unmodulated	FM 100	98 Mc.	L4 Det. Coil Slug	Align det. stage to maximum reading.

IMPORTANT

Alignment of this chassis will in most cases be unnecessary unless an IF or RF transformer is replaced or the adjustments have been tampered with.

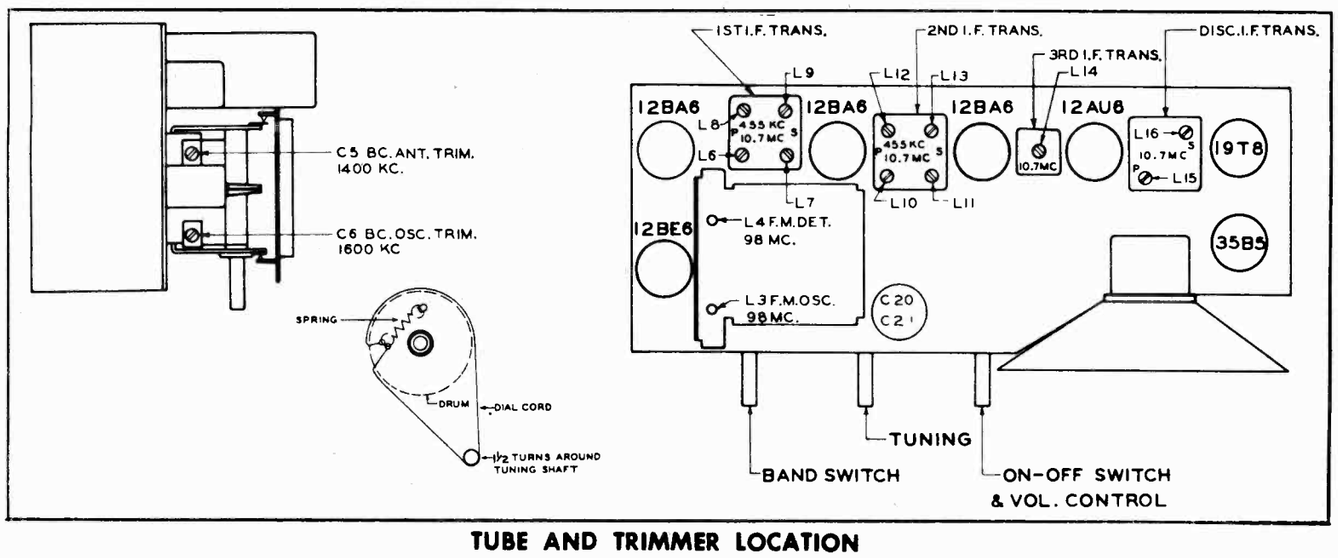
Correct alignment can only be made if the following procedure is followed:

A vacuum tube voltmeter with an isolation resistor of 2,000,000 ohms in series with the hot lead will serve for FM adjustments. This lead should be shielded.

An AC output meter connected across the primary or secondary of the output transformer will be satisfactory for all AM adjustments.

The signal generator output should be kept just high enough to get an indication on the meter.

(a) Vacuum Tube Voltmeter Lug 6 on discriminator transformer to chassis (half discriminator load).
(b) Vacuum Tube Voltmeter Lug 3 on discriminator transformer to chassis (full discriminator load).
(c) Vacuum Tube Voltmeter from Limiter Grid to Chassis.
(d) Loosen Slugs by applying a hot iron to the cement.



TUBE AND TRIMMER LOCATION

TO THE SERVICE MAN:

The 7E02 chassis incorporates a superheterodyne circuit with two stages of IF, on the FM Band, and one stage on the AM Band. There is one stage of RF amplification on all bands.

When adjustments are made on the 7E02 or any AC-DC chassis, a line isolation transformer (110 V input to 110 V output) is recommended in order to avoid a "hot" chassis. If an isolation transformer is not available, check the AC voltage between chassis and bench ground, and if there is any indication of voltage, reverse the plug before handling the set.

AM Alignment: The alignment of this chassis on the standard broadcast band is conventional. The alignment slugs in the IF transformers are threaded and screw into the coil forms. The slugs are slotted for a small size fiber screw driver. Do not press hard on the aligning tool or the threads in the coil forms will strip and adjustment will be impossible.

FM RF Alignment: The tuning slugs are attached to threaded shafts and the slugs are varied in the field of the coils by turning the shafts clockwise or counter-clockwise. After adjustment the shafts must be secured with a drop of speaker cement.

FM IF Alignment: The same type of tuning slugs for aligning the AM IF Amplifier are used for the FM IF's. Observe the same precautions when making adjustments.

FM IF Alignment: Because of the wide band pass, it is desirable to use a FM signal generator and a cathode ray oscilloscope when aligning the FM IF channel. The instruction book for the Zenith Model 800 Signal Generator (Form Z800I) covers complete FM alignment procedure. If visual alignment equipment is unavailable, reasonably accurate alignment can be made by following the procedure outlined below.

FM Discriminator Alignment: When the secondary of the discriminator is aligned (operation 5) use sufficient signal input to get a good positive and negative indication before setting the slug for zero reading. A center zero indicating meter is recommended for this adjustment, but is not absolutely necessary. Reversing the leads of a non-zero center meter, or observing closely when the meter starts to go to the left (negative) of zero will give the same results.

ZENITH RADIO CORP.

MODEL 7H822,
CHASSIS 7E02

PARTS LIST

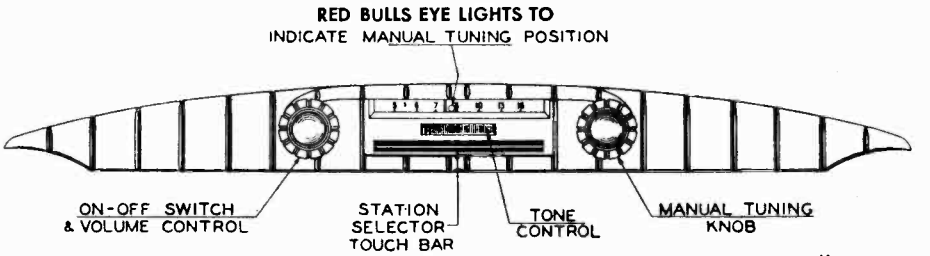
PART NO.	REF. NO.	DESCRIPTION
		DIAL ASSEMBLY
26-403		Dial Scale
46-734		Volume and Tuning Control Knob (2 used)
46-735		Band Switch Knob
54-268		Speed Nut (Cabinet Plate Mtg.)
57-1378		Cabinet Emblem Plate
59-146		Dial Pointer
76-506		Tuning Control Shaft
80-69		Dial Cord Tension Spring
80-444		Tuner Arm Tension Spring
80-580		Tuner Arm Stop Spring
80-581		Tuner Arm Pressure Spring
93-956		1/16" x 9/32 x 3/4" Black Felt Washer (59-146)
94-295		Dial Spacer Bushing
188-32		Retaining Ring
S14523		Tuning Shaft Bracket and Insulating Strip Assembly
S14524		Condenser Pulley and Cam Assembly
S14525		Tuner Arm Assembly
S14526		Dial Cord and Eyelet Assembly
		COILS AND CHOKES
S13871	L5	F. M. Detector Coil Assembly
S13973	T4	Discriminator Transformer Assembly
S13997	L17	Filament Choke Assembly (2 Used)
S14480	L2	F. M. Antenna Coil Assembly
S14481	L5	Broadcast Oscillator Coil Assembly
S14509	T3	3rd. I. F. Coil Assembly
S14521	T1	1st. I. F. Transformer Assembly
S14522	T2	2nd. I. F. Transformer Assembly
S14695	L3	F. M. Oscillator Coil Assembly
		CONDENSERS
22-162	C2	100 MMFD (Or 22-1669) .500 V.
22-229	C16	.005 Mfd. .600 V.
22-829	C9	.05 MFD .200 V.
		MISCELLANEOUS--Continued
49-634	SP1	P.M. Speaker - 5-1/4".
		206-634 Output Transformer
		208-634 Cone and Voice Coil
54-30		#8-32X5/16" Hex. Nut-Steel-N.P.
54-139		3/8-32 X 9/16" Palnut-Cads
54-226		Speed Nuts (2 Used)
57-1269		I.F. Transformer Terminal Plate
58-128		Two Prong Plug
73-30		#6-32 X 1/4" Hex. Slotted Set Screw-Cuppoint (2 Used)
78-787		Socket-Two Contact
78-788		Socket-Miniature Tube (9 Contact)
78-806		Socket-Miniature Tube
78-807		Socket-Miniature Tube
83-1056		Wavemagnet Mtg. Strip
83-1063		Threaded Insert (Used on all I.F. Transformers
83-1064		Threaded Insert (Used on all I.F. Transformers
83-1090		Insulating Strip
83-1498		Insulating Strip
83-1520		Rectifier Insulating Strip
83-1545		Insulating Strip (3 Used)
85-430	S1	Band Switch
93-94		Insulating Shoulder Strip
93-125		#6 Int. Lockwasher
93-126		#8 Int. Lockwasher
93-665		Fibre Washer
93-910		Felt Washer-Brown (3 Used)

PART NO.	REF. NO.	DESCRIPTION
22-830	C13	.02 MFD. .690 V.
22-854	C17	500 MMFD .600 V.
22-1017	C14	.05 MFD. .400 V.
22-1126	C15	.01 MFD. .400 V.
22-1158	C18	.05 MFD. .200 V.
22-1220	C10	.002 MFD .600 V.
22-1367	C19	50 MMFD. (Ceramic) .500 V.
22-1385	C1	.01 MFD. .200 V.
22-1492	C7	50 MMFD. (Ceramic) .500 V.
22-1507	C12	25 MMFD. (Ceramic) .500 V.
22-1676	C3	.001 MFD. (Ceramic) .500 V.
22-1688	C8	19 MMFD. (Ceramic) .500 V.
22-1742	C4	Two Section Variable .500 V.
22-1757	C20, C21	Electrolytic 80-40 MFD.-150 V.
22-1768	C11	30 MMFD. (Ceramic) .500 V
		RESISTORS
63-686	R18	150 Ohm W. W. (Insulated) .1/2 W.
63-1223	R15	1 Ohm W. W. (Insulated) .1/2 W.
63-1450	R19	22 Ohm W. W. (Insulated) .1 W.
63-1527	R13	1000 Ohm W. W. (Insulated) .3 W.
63-1646	R11	Volume Control and Switch
63-1737	R2	68 Ohm (Insulated) .1/2 W.
63-1758	R4	220 Ohm (Insulated) .1/2 W.
63-1779	R1	680 Ohm (Insulated) .1/2 W.
63-1782	R12	820 Ohm (Insulated) .1/2 W.
63-1800	R16	2200 Ohm (Insulated) .1/2 W.
63-1835	R9	15M Ohm (Insulated) .1/2 W.
63-1842	R3	22M Ohm (Insulated) .1/2 W.
63-1856	R7	47M Ohm (Insulated) .1/2 W.
63-1870	R8	100M Ohm (Insulated) .1/2 W.
63-1876	R10	150M Ohm (Insulated) .1/2 W.
63-1898	R17	470M Ohm (Insulated) .1/2 W.
63-1912	R6	1 Megohm (Insulated) .1/2 W.
63-1926	R5	2.2 Megohm (Insulated) .1/2 W.
63-1940	R14	4.7 Megohm (Insulated) .1/2 W.
		MISCELLANEOUS
12-1070		Wavemagnet Mounting Bracket
14-1022		Model 822-Plastic Cabinet
97-293		Chassis Mtg. Stud
112-281		#10 X 3/4" Oval Binding Hd. Self Tapping Screw Statuary Bronze
112-697		#6 X 7/16" Straight Side B.H. Self Tapping Sc.-Steel-Cad (Cabt.Back Mtg.)
114-48		#6-32 X 1/4" Hex. Acorn Hd. M.S. Steel - N.P.
114-58		#6-32 X 3/8" Hex. Acorn Hd. M.S.-Steel-N.P.
114-78		#8 X 5/16" Hex. Hd. Slotted Self Tapping Sc. Steel N.P.
114-92		#6 X 1-1/8" Hex. Hd. Slotted Self Tapping Sc. Cad
114-271		#6 X 1/4" Hex. Hd. Slotted Self Tapping Sc. Type Z Cad
149-39		Iron Core (Used on all I.F. Transformers)
149-64		Iron Core & Spring (2 Used)
149-66		Iron Core (Used on all I.F. Transformers)
159-50		Plug Button
192-117		Dial Crystal
196-111		Speaker Gasket
202-506		F. M. Instruction Book
202-663		Instruction Book
212-3	SE1	Selenium Rectifier (or 212-4)
S14527		Wavemagnet Lead & Stop Assembly
S14549		Cabinet Back, Socket, & A.C. Cord Assembly
S14957	L1	Wavemagnet Assembly-Type 26GR

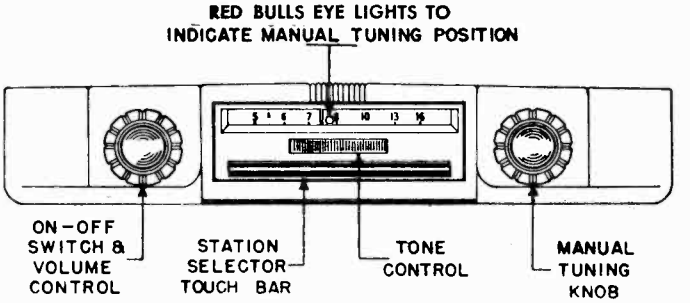
MODEL 7ML780, Lincoln;
7ML781 Lincoln Continental

ZENITH RADIO CORP.

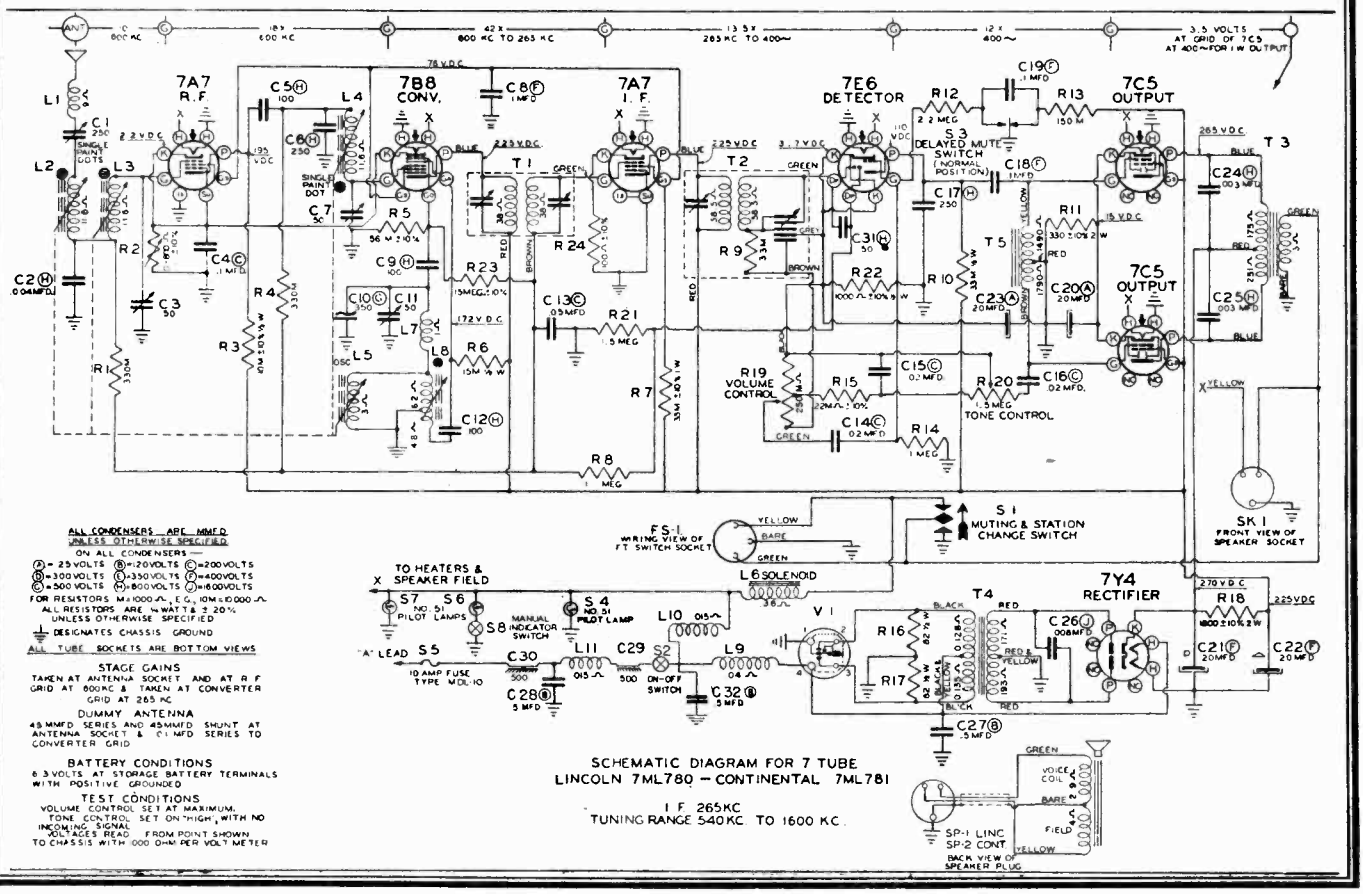
OPERATING INSTRUCTIONS



LINCOLN FIG. 1A



LINCOLN CONTINENTAL FIG. 1B



ZENITH RADIO CORP. MODEL 7ML780, Lincoln; 7ML781 Lincoln Continental

INSTALLATION INSTRUCTIONS

ANTENNA. The new Lincoln antenna is especially designed to work satisfactorily with this receiver. The installation instructions are included with the antenna.

IMPORTANT: 1200 K.C. ANTENNA ADJUSTMENT. After the receiver has operated for approximately 15 minutes, tune in a weak station near 1200 Kc. Adjust the antenna trimmer (C1, Fig. 2) for maximum signal.

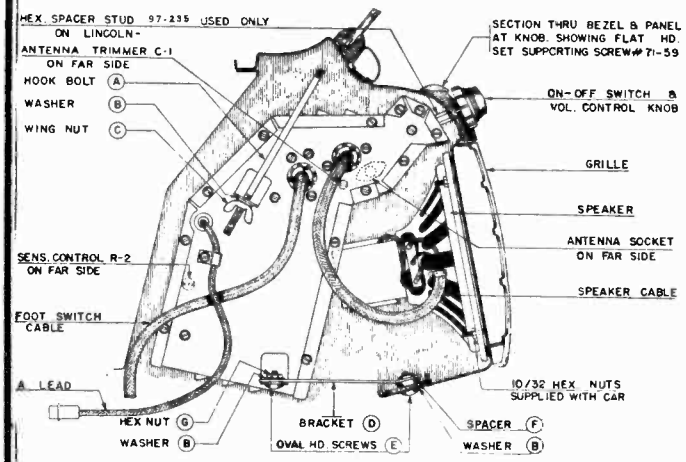


FIG. 2

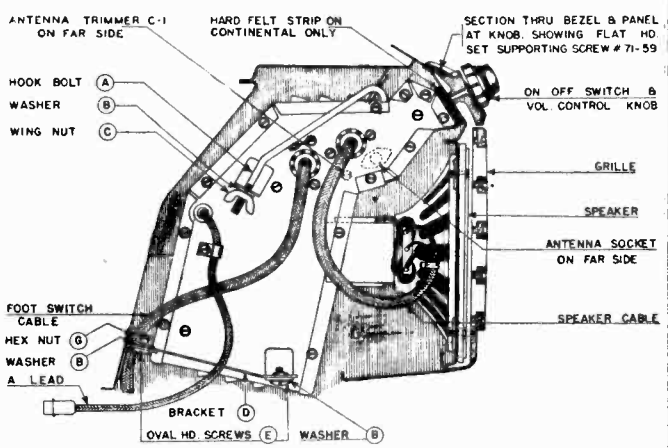


FIG. 2A

Lincoln Receiver Installation

1—Remove the cardboard cover from the speaker hole in the center of the instrument panel. Do not discard the nuts. Remove the bezel from the instrument panel by loosening the nuts on the underside.

2—Remove the protective cover from the speaker. Install the speaker on the rear of the grille so the cable is toward the left. Use the nuts that held the instrument panel hole cover in place.

3—Hang the hook bolts "A" in the holes provided for them in the dash so that the hooks are turned away from the receiver.

4—Place the receiver in position and slip the threaded end of the hook bolts through the upper hanger brackets.

5—Apply lock washers "B" and wing nuts "C" to the hook bolts and tighten them sufficiently to hold the receiver in place while installing the lower support brackets "D." Fasten the tapped end of the brackets to the instrument panel, using spacer washers "F," lock washers "B", and oval head screws "E." Fasten the other end of the bracket to the lower angle bracket of the receiver. Tighten all screws and nuts so that the receiver is held firmly in place (Fig. 2).

6—Connect the "A" lead to the battery terminal of the circuit breaker on the firewall. (Fig. 3.)

7—Connect the speaker cable and the antenna lead-in cable to the receiver and turn the power on.

8—Place the escutcheon plate, furnished with the receiver, over the tuning and volume control shafts and fasten it in place with the two 8/32" flat head screws furnished in the installation kit.

9—Fit tuning and volume control knobs to their respective shafts.

NOTE: Tuning control knob is fastened to the shaft with a set screw. Shaft has a milled recess for the screw.

Lincoln Continental Receiver Installation

The Continental Radio installation is similar to the Lincoln installation with the exception of the speaker.

To install the Continental speaker, remove the speaker grille which is held in place by four nuts on the back of the instrument panel. Place the speaker in position through the front of instrument panel so the cable is to the left. Fasten securely with the four No. 10/32 machine screws and lock washers. Replace the grille and proceed with the installation of the receiver as instructed under Lincoln Receiver installation. Note position of bracket D in figure 2A.

Foot Control Switch Installation

1—Remove the floor mat around the clutch and brake pedals.

2—Drill a hole in each of the three extrusions in the floor, between the clutch and brake pedals, with a No. 27 drill. (Fig. 3.)

3—Fasten the foot control switch in place with the sheet metal screws furnished. Dress the cable so that the plug can be inserted into the foot switch cable receptacle at the left side of the receiver as shown in figure 2.

4—Cut a hole in the floor mat for the foot switch button. Install the foot switch eyelet (furnished in the installation kit) in the hole. Replace the floor mat. A piece of 1⅛" pipe that has been sharpened on the inside of one end may be used to cut the hole.

MODELS 7ML780, Lincoln;
7ML781 Lincoln Continental

ZENITH RADIO CORP.

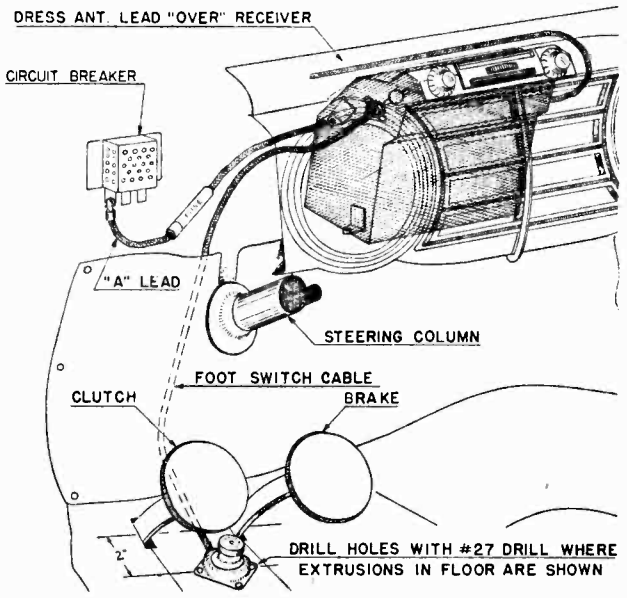


FIG. 3

Setting the Touch-Bar Tuning

Pressing the station selector touch-bar six times will cause the tuning mechanism to change through a cycle of six positions. Five of the Adjust-O-Matic positions may be set for favorite local stations. A red dot will appear in the tuning scale background when the Adjust-O-Matic is in the sixth position. This position may be used for selecting stations manually.

Using the manual (DIAL) position as a reference point, the remaining five positions may be adjusted in succession to any desired dial settings. Setting the stations in sequence according to their frequencies, beginning at the low frequency and progressing through to the high frequency end of the dial, is the recommended practice for simplifying the identification of each Adjust-O-Matic station.

Turn the receiver on and allow it to operate for at least fifteen minutes to bring the temperature up to normal before making the following Adjust-O-Matic settings.

1—Press station selector touch-bar (Figs. 1A and 1B) until red dot appears in dial scale background. Press the touch-bar once more to advance Adjust-O-Matic mechanism to No. 1 position.

2—Pull manual tuning knob outward to engage the Adjust-O-Matic mechanism.

3—Select the station desired and tune to its frequency by turning the tuning knob. Tune very carefully for clearest reception.

CAUTION: DO NOT ATTEMPT TO FORCE THE KNOB IN. The knob will automatically return to the "IN" position when the station selector touch bar or the foot switch is operated.

4—Press station selector bar, pull tuning knob outward, and tune in station desired for No. 2 position. Use same procedure for positions No. 3, 4 and 5. Note: When the green dot appears in the tuning scale background, the manual tuning knob must be pulled outward and rotated to select the stations manually.

Interference Elimination

IMPORTANT: Use the utmost care in the following operations to insure freedom from interference. Be sure that clean contacts are made when connecting condensers in the car. If necessary, clean away paint or dirt with emery paper to make good ground. Tighten all bolts and nuts securely.

1. Mount the voltage regulator condenser No. 22-1192 and the ground strap No. S-9343 on "ground" terminal of the voltage regulator. (Fig. 4.) Connect the lead of the condenser to the ARM. terminal of the voltage regulator. Connect the end of the ground strap to the lower, left hand voltage regulator mounting screw. (Fig. 4.)

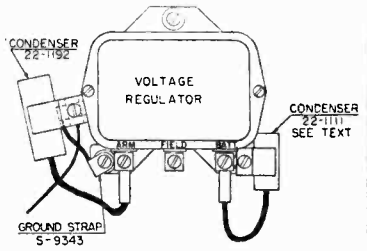


FIG. 4

2. Mount condenser No. 22-1111 under the lower right hand voltage regulator mounting bolt, and connect the lead to the BATT. terminal of the voltage regulator. (Fig. 4).

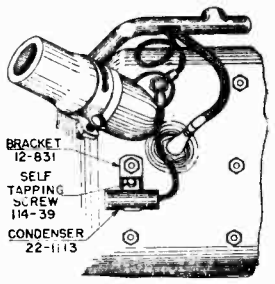


FIG. 5

3. Install the water temperature gauge condenser No. 22-1113 with its separate bracket (which fastens under one of the cylinder head nuts.) (Fig. 5.)

4. Install the condenser No. 22-1113 on the oil gauge unit. (Fig. 6.)

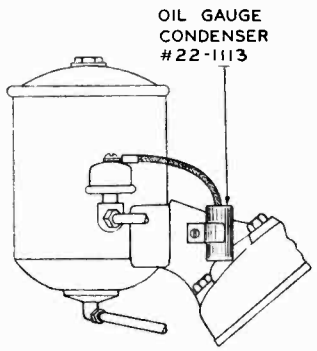


FIG. 6

5. Install the motor hood grounding spring. (Fig. 7.)

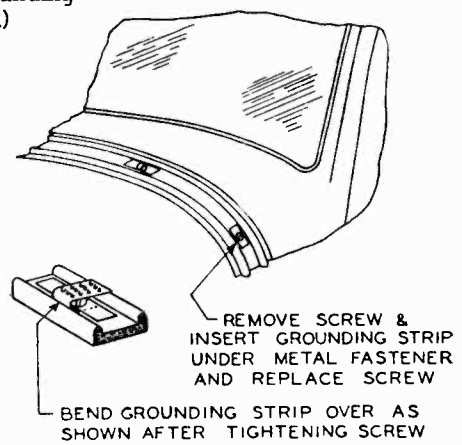


FIG. 7

ZENITH RADIO CORP.

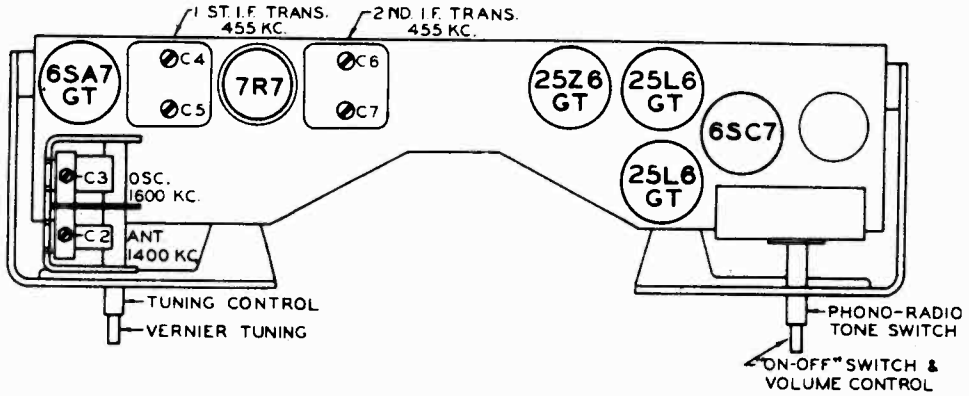
MODEL 7R070,
CHASSIS 6C06

PARTS LIST

PART NO.	REF. NO.	DESCRIPTION
		DIAL ASSEMBLY
46-610		Tuning Control Knob
46-611		Volume Control Knob
46-612		Phono-Radio Knob
46-613		Tuning Control Knob (Vernier)
46-614		Phono-Reject Knob
78-582		Socket-Phono (9 Contact)
188-53		Retaining Ring (Used on Volume Control and Phono-Radio Switch)
188-54		Knob Retaining Ring (2 used)
188-93		Knob Retaining Ring (1 used on 46-613)
196-83		Speaker Gasket
S12732		Control Linkage Assembly
		COILS AND CHOKES
95-970	T1	1st I.F. Transformer
95-971	T2	2nd I.F. Transformer
S12389	L4	Antenna Loading Coil Assem.
S12733	L2	Oscillator Coil Assembly
		CONDENSERS
22-188	C10	.02 Mfd .400 V.
22-196	C15	.01 Mfd .600 V.
22-326	C14	.003 Mfd .400 V.
22-327	C12	.02 Mfd .200 V.
22-827	C28	.1 Mfd .200 V.
22-829	C4	.05 Mfd .200 V.
22-953	C9	.0002 Mfd .600 V.
22-954	C13	350 Mmfd .600 V.
22-1017	C17	.05 Mfd .400 V.
22-1049	C16	.03 Mfd .400 V.
22-1362	C11	.004 Mfd .600 V.
22-1381	C18,19,20	Electrolytic 40-40-40 Mfd .150 V.
22-1541	C1	Two Gang Variable
22-1775	C21	.047 Mfd .400 V
		RESISTORS
63-311	R6	15M Ohm .1/4 W.
63-583	R1	1000 Ohm .1/4 W.
63-589	R2	10M Ohm .1/4 W.
63-597	R7	470M Ohm .1/4 W.
63-600	R4	2.2 Megohm .1/4 W.
63-641	R9	10M Ohm .1/4 W.
63-658	R8	390M Ohm .1/4 W.
63-976	R3	15 Megohm .1/4 W.
63-1070	R12	680 Ohm (Wirewound) (Insulated) .1 W.
63-1366	R10	140 Ohm (Zipohm) .2-1/2 W.
63-1474	R5	Volume Control & Switch
63-1475	R11	100 Ohm (Wirewound) (Insulated) .2 W.
63-1511	R13, R14	Candohm 22 ohm 1 W (WW), 60 Ohm, 7W (WW)
		PRE-AMP PHONO UNIT
S14605	L3	Oscillator Coil Assembly (FM Phono)
S13198		Pre-Amp Phono Cable Assem.
S13201		Pre-Amp Phono Unit (Compl.)
22-162	C25	100 Mmfd .500 V.
22-448	C24	.004 Mfd .600 V.
22-829	C4	.05 Mfd .200 V.
22-1532	C23	50 Mmfd (Mica) .500 V.
22-1610	C26	40 Mfd. Electrolytic .150 V.
22-1673	C27	20 Mmfd. (Ceramic) .500 V.
58-133	P1, P2	Phono Plug (Used on S13198)
63-591	R21	22M Ohm .1/4 W.
63-597	R7	470M Ohm .1/4 W
63-604	R16	10 Megohm .1/4 W.
63-648	R20	47M Ohm .1/4 W.
63-659	R18	470M Ohm .1/4 W.
63-710	R19	15M Ohm (Insulated) .1/4 W.
63-976	R3	15 Megohm .1/4 W.
78-229		Electrolytic Socket
78-401		Tube Socket (or 78-596) (8 contact)
80-469		Mounting Spring (3 used)
126-523		Chassis Shield
		RECORD CHANGER
141-104	B1	Phono Motor, 60 Cycle
S12575	S3A	Trip Contact Assembly
S12579	S3B	Insulator Strip Assembly
S11458	S4	Solenoid
85-372	S5	3 Position Switch
78-582	Soc 1, 2	Phono Socket
		MISCELLANEOUS
11-87		Line Cord and Plug (8 ft.)
12-1350		Line Cord Support Bracket
15-65		Plug Shield (used on S12734)
15-67		Plug Cap and Insulator (used on S12734)
17-86		Record Locking Clamp. (2 - 17-86 must be used with 188-99)
19-99		Coil Mounting Clip
19-123		Phono Mounting Clip
24-392		Volume Control and Switch Cover
36-34		Cabinet Handle
36-35		Cabinet Handle Insert for 36-34
40-38		Cabinet Lid Support
49-559	SP1	6½" P.M. Speaker. 206-559 Output Transformer. 208-559 Cone and Voice Coil
52-372		Speaker Socket and Cable
54-245		#8-32 Speed Nut
57-1195		Ventilation Plate
57-1196		Front Panel (Plastic)
57-1197		Chassis Front Plate
70-133		#6 x 3/8" Phillips R. H. Wood Screw - Steel - Statuary Bronze (5 used)
72-68		#4 x 1/2" Phillips F. H. Wood Screw (8 used) (Front Panel Mtg. Screw)
72-69		#6 x 3/4" Flat Hd. W. Screw (10 used) Steel - Black Oxidize
78-229		Socket - Electrolytic Cond.
78-401		Socket - Loktal (or 78-596) (8 contact)
78-611		Socket - Tube (Octal - 8 contact)
80-512		Phono Unit Mounting Spring (Top) (4 used)
80-541		Tone Arm Retaining Spring
83-1228		Pin Jack Terminal Strip (Gang Condenser)
83-1347		Handle Name Strip
83-1350		Insulating Strip (for 63-1511)
83-1491		Felt Strip
84-66		Record Locking Clamp Support
85-388	S1	4 Position Switch (Phono-Radio)
85-389	S2	Reject Switch
93-125		#6 Internal Shakeproof Lockwasher #1206 (7 used)
93-127		#10 Internal Shakeproof Lockwasher (4 used)
93-833		Shoulder Washer (Rubber) (4 used)
93-853		#6 Countersunk Washer (10 used)
94-295		Condenser Mounting Bushing (3 used)
110-120		Grille Cloth
112-187		#10-32 x 1-1/4" Phillips Oval Hd. M. Screw. Steel - Bronze (4 used) (Chassis Mtg.)
112-544		Phono Unit Mounting Screw
114-265		#10-32 x 1-1/4" Slotted Hex Acorn Hd. M.S. - N.P. (4 used) (Handle Mtg.)
125-54		Rubber Grommet
126-379		Tube Shield (7R7)
156-22		Cover Lotch (Upper Half)
156-23		Cover Latch (Lower Half)
166-40		Recess Bumper (4 used)
188-99		Clamp Ring
202-450		Instruction Book
S12734	W1	Phono Cable Assembly
S12740	L1	Wavemagnet Assem. - Type 29C
S13200		Non-Intermixer Record Changer
S13270		Handle & Name Strip Assem.

The alignment of chassis 6C06 is conventional. None of the adjustments interlock, however, the most accurate alignment will be accomplished if the procedure is followed exactly. The IF frequency is 455 KC and all measurements, voltage, and resistance have been taken with an electronic voltohm meter.

Stage by stage gain measurements are for reference purposes only. Gain measurements can seldom be duplicated, and are used only for comparison purposes.



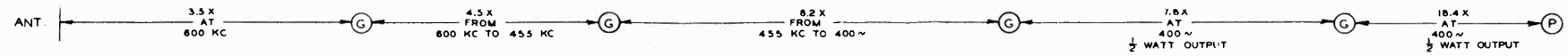
TUBE AND TRIMMER LOCATION

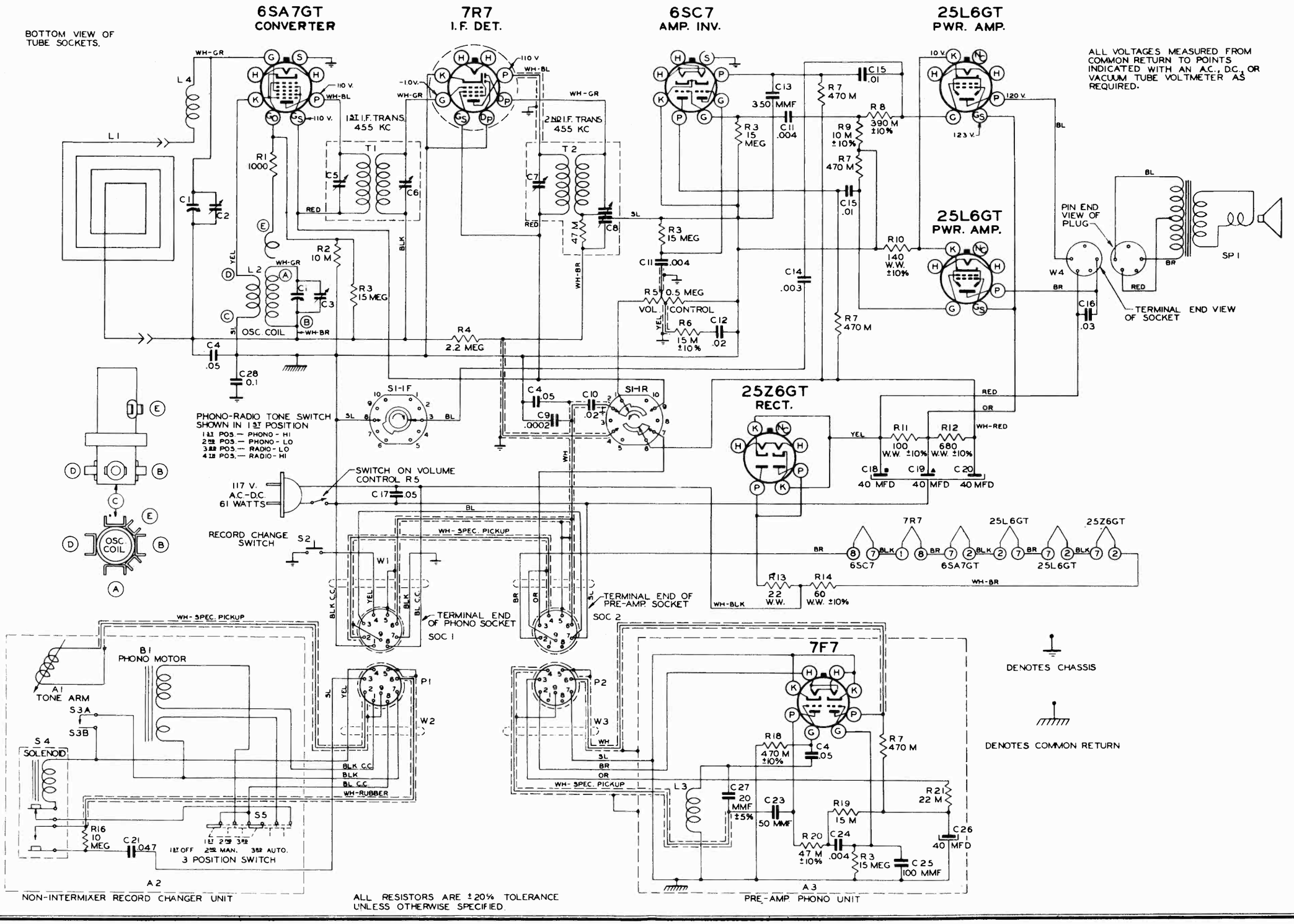
ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 MFD	455 KC	600 KC	C4,5,6,7	Align IF
2	One turn Coupled to Loop		1600 KC	1600 KC	C3	Set Oscillator to Dial Scale
3			1400 KC	1400 KC	C2	Align Antenna

ZENITH RADIO CORP.

MODEL 7R070,
CHASSIS 6C06

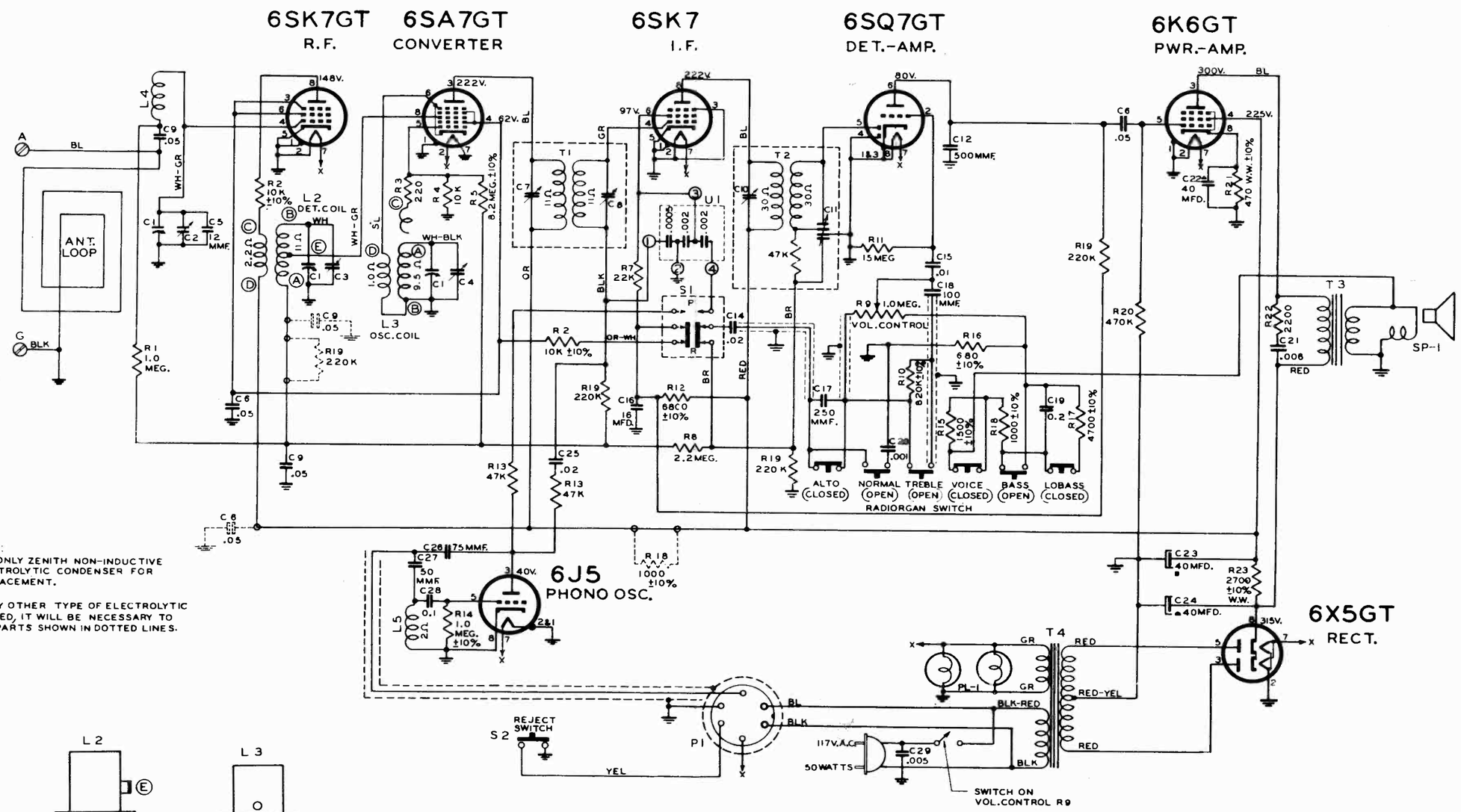




ALL RESISTORS ARE ±20% TOLERANCE UNLESS OTHERWISE SPECIFIED.

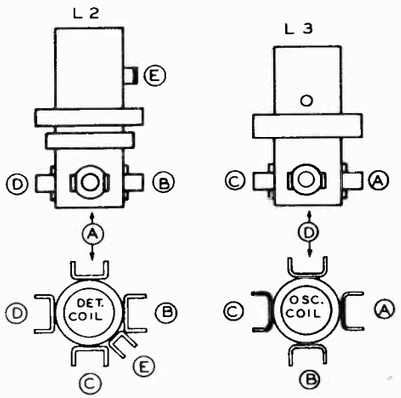
MODEL 7R887, CHASSIS 7E22

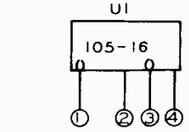
ZENITH RADIO CORP.



NOTE:
USE ONLY ZENITH NON-INDUCTIVE ELECTROLYTIC CONDENSER FOR REPLACEMENT.

IF ANY OTHER TYPE OF ELECTROLYTIC IS USED, IT WILL BE NECESSARY TO ADD PARTS SHOWN IN DOTTED LINES.





ON TRIPLE CAPACITORS LEADS LINE UP ACCORDING TO THE PART NUMBER AS SHOWN.

ALL VOLTAGES MEASURED FROM COMMON RETURN TO POINTS INDICATED WITH AN A.C., D.C. OR VACUUM TUBE VOLTMETER

ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED

ALL RESISTORS ±20% TOLERANCE UNLESS OTHERWISE SPECIFIED

DENOTES CHASSIS

I.F. FREQUENCY 455K.C.

TUNING RANGE
535 —— 1620K.C.

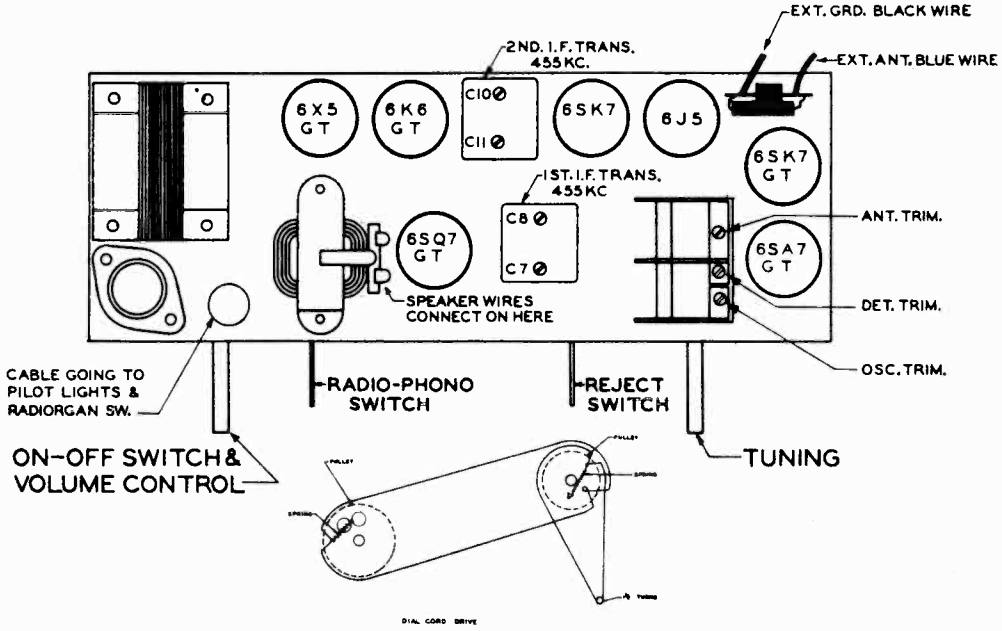
RECORD CHANGER: Zenith Model S-14004, RCD.CH. 18-1

A feature of chassis 7E22 is a high gain tuned R.F. stage ahead of the conventional superheterodyne circuit.

When making repairs or adjustments on the chassis be sure to have the Phono-Radio switch in Radio position (button out).

The Radiogran tone control is of the low impedance type in which a portion of the audio voltage is taken from the speaker voice coil and fed back out of phase into the grid of the first audio. The characteristic of the feedback voltage is determined by the setting of the Radiorgan buttons. To attenuate the high notes, more highs are fed back. To attenuate the low notes, more lows are fed back. For normal reproduction, both highs and lows are fed back and results in no overall change in tone.

The 6SK7 1st IF tube is also the phono preamplifier. The output from the phono oscillator is fed to the grid of the 6SK7 through R13 and C25. The amplified output is taken from the screen grid and fed back through U1 and C14 into the volume control circuit and the grid of the 6SQ7GT 1st audio amplifier.



TUBE TRIMMER LOCATION AND DIAL CABLE DRAWING

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 Mfd.	455 Kc.	600 Kc.	C-7, C-8 C-10, C-11	Align I. F.
2	One turn loop loosely coupled to the wavemagnet	--	1600 Kc.	1600 Kc.	Oscillator Trimmer	Set Oscillator to Dial Scale
3		--	1400 Kc.	1400 Kc.	Detector Trimmer	Align Det.
4		--	1400 Kc.	1400 Kc.	Antenna Trimmer	Align Ant.

PARTS LIST

PART NO.	REF. NO.	DESCRIPTION
		DIAL ASSEMBLY
26-402		Dial Scale
59-213		Dial Pointer
76-501		Tuning Control Shaft
78-699		Dial Light Socket
80-402		Dial Cord Tension Spring
80-634		Pointer Retaining Spring
93-690		Brown Felt Washer
94-371		Pointer Pulley Bushing (S11292)
100-36	PL-1	Dial Light Bulb - Mazda #44
188-32		Retaining Ring (Tuning Shaft)
188-34		Retaining Ring (Pointer Pulley)
S-11292		Pointer Pulley & Bushing Assem. (59-213)
S11358		Dial Cord & Eyelet Assem. (Short)
S14475		Pulley & Bushing Assem.
S14477		Dial Plate & Stud Assem.
S14478		Dial Cord & Eyelet Assem. (Long)
		COILS & CHOKES
95-1091	T1	1st. I. F. Transformer
95-1092	T2	2nd. I. F. Transformer
S11163	L2	Detector Coil Assembly
S12603	L5	Pre-Amp Oscillator Coil Assembly
S14195	L4	Loop Loading Coil Assembly
S14654	L3	Oscillator Coil Assembly
		CONDENSERS
22-171	C6	.05MFD 600V.
22-182	C17	.00025MFD. (or 22-1666) 500V.
22-188	C14	.02MFD 400V.
22-243	C15	.01MFD 400V.
22-365	C18	.0001MFD 500V.
22-458	C21	.006MFD. 600V.
22-530	C5	12MMFD 500V.
22-829	C9	.05MFD 200V.
22-830	C25	.02MFD 600V.
22-854	C12	.0005MFD 600V.
22-887	C20	.001MFD. 600V.
22-1041	C29	.005MFD. 400V.
22-1256	C26	75MMFD. (or 22-1746) 500V.
22-1418	C28	.1MFD. 200V.
22-1531	C19	.2MFD. 200V.
22-1720	C22.23.24	Electrolytic 40MFD.-25V.X40-40MFD. 450V
22-1755	C16	16MFD. Electrolytic. 300V.
22-1761	C27	50MMFD. Ceramic. 500V.
22-1772	C1	Three Gang Variable.
105-16	U1	.0005 MFD - 400V .002 MFD - 400V. .002 MFD - 400V.
		RESISTORS
63-1071	R2	10K Ohm (Insulated). 1W.
63-1534	R23	2700 Ohm . (Insulated) W.W 4W.
63-1222	R21	470 Ohm. . (Insulated) W.W 1W.
63-1571	R12	6800 Ohm . (Insulated) 2W.
63-1648	R9	Volume Control & Switch.
63-1758	R3	220 Ohm. . (Insulated) 1/2W.
63-1778	R16	680 Ohm. . .(Insulated). 1/2W.
63-1785	R18	1000 Ohm . .(Insulated). 1/2W.
63-1792	R15	1500 Ohm . .(Insulated). 1/2W.
63-1800	R22	2200 Ohm . .(Insulated). 1/2W.
63-1813	R17	4700 Ohm . .(Insulated). 1/2W.
63-1828	R4	10K Ohm. . .(Insulated). 1/2W.
63-1842	R7	22K Ohm. . .(Insulated). 1/2W.
63-1855	R13	47K Ohm. . .(Insulated). 1/2W.
63-1884	R19	220K Ohm . .(Insulated). 1/2W.
63-1898	R20	470K Ohm . .(Insulated). 1/2W.
63-1908	R10	820 K Ohm. .(Insulated). 1/2W.
63-1911	R14	1 Megohm . .(Insulated). 1/2W.
63-1912	R1	1 Megohm.. .(Insulated). 1/2W.
63-1926	R8	2.2 Megohm .(Insulated). 1/2W.
63-1950	R5	8.2 Megohm .(Insulated). 1/2W.
63-1961	R11	15 Megohm. .(Insulated). 1/2W.
		MISCELLANEOUS
2-133		Cabinet Back
11-104		Line Cord & Plug - 7 Ft. Long.
12-886		Tuning Shaft Bracket
12-1187		Dial Plate Bracket - R.H
12-1188		Dial Plate Bracket - L.H
15-82		Plug Cap & Insulator
19-169		Record Changer Mounting Clip (4 Used).
46-697		Tuning & Volume Control Knob
46-726		Phono Switch Knob.
49-636	SP-1	10" P.M. Speaker 208-636 Cone & Voice Coil.
54-30		#8-32X5/16" Hd. Nut-Steel-N.P. (Speaker Mtg.)
54-139		#3/8-32X9/16" Palnut Cad
54-143		Speed Nut.
54-228		Speed Nut (Trim Strip Mtg.).
54-267		#6-32X5/16" Palnut-Steel-Cad. (4 Used).
57-1380		Dial Escutcheon.
70-83		#6X1/2" Washer Hd. Wood Screw (12 Used) (Cabinet Back)
72-59		#2X1/2" Flat Phillips Hd. Wood Screw-Steel Brass Plate.
73-35		#8-32X3/16" Hex. Hd. Slotted Set Screw-Cuppoint (2 Used).
78-709		Socket-Octal Tube.
78-750	P1	Socket-Phono Cable
78-793		Socket-Octal Tube (6 Used)
80-463		Record Changer Mtg. Spring (4 Used).
80-604		Hinge Spring (2 Used).
83-765		Armite Strip (3 Used).
83-1245		Record Changer Trim Strip.
83-1501		Escutcheon Trim Strip.
83-1521		Dial Crystal Rubber Strip.
85-422	S2	Reject Switch.
85-425	S1	Phono-Radio Switch
93-35		.032 x 144 x 3/8" Steel Washer-N.P. (3 Used)
93-125		#6 Int. Shakeproof Lockwasher #1206 (2 Used)
93-392		3/32" X 33/64" X 1" Brown Felt Washer (2 Used).
93-525		1/16" X .127 X 5/16" Fibre Washer.
93-897		1/16" X 13/64" X 1" Steel Washer-Cad.
94-295		Condenser Mounting Bushing
94-584		Gang Condenser Pulley Bushing.
95-1093		Output Transformer
95-1094		Power Transformer.
112-56		#6X1/4" Hex. Hd. Self Tapping Screw (2 Used)
112-350		#10X1-3/4" R.H. Self Tapping Screw-Type Z
112-712		Record Changer Mounting Screw (4 Used).
114-26		#8X1/4" Hex. Hd. Self Tapping Screw.
114-58		#6-32-X3/8" Hex. Acorn Hd. M.S. -Steel-N.P
114-128		#10X1-1/16" Hex. Washer Hd. Self Tapping Screw (4 Used)
125-17		Rubber Grommet (5 Used).
125-26		Rubber Grommet (2 Used).
159-50		Snap Button-Black Oxidize Finish (5 Used).
192-119		Dial Crystal
196-81		Dial Crystal Dust Gasket
202-602		Instruction Book (Radio & Phono)
S-14004		Non-Intermixer Record Changer.
S-14531		Record Changer Compartment Hinge Assem. (R.H.).
S-14532		Record Changer Compartment Hinge Assem. (L.H.).
S-14557		Record Changer Mtg. Frame Assem.
		RADIORGAN ESCUTCHEON PARTS
57-1381		Radiorgan Escutcheon (R.H.).
57-1382		Radiorgan Escutcheon (L.H.).
76-444		Radiorgan Knob Shaft (2 Used).
80-639		Radiogran Retaining Spring (2 Used).
112-723		#6X7/32" Rd. Phillips Hd. Self Tapping Screw
S-14255		Radiorgan Mounting Bracket Assem
S-14261		Radiorgan Strip & Contact Assem. (2 Used).
S-14273		Radiorgan Knob & Eyelet Assem.-Lo-Bass.
S-14274		Radiorgan Knob & Eyelet Assem.Bass
S-14276		Radiorgan Knob & Eyelet Assem.Treble
S-14277		Radiorgan Knob & Eyelet Assem.Alto
S-14278		Radiorgan Knob & Eyelet Assem. Normal
S-14554		Radiorgan Escutcheon & Knob Assem. (R.H.)
S-14555		Radiorgan Escutcheon & Knob Assem. (L.H.)
S-14663		Radiorgan Knob & Eyelet Assem. - Voice.

25M-648-CPC