MODEL G-60

Six-Tube, Electric Tuning, Single Band, A-C, Superheterodyne Receiver

Electrical Specifications

Frequency Range ..... 540-1,720 kc
Two Stations between approximately 550-980 kc (Keys 1 and 2—left)
One Station between approximately 650-1,080 kc (Key 3)
Two Stations between approximately 850-1,500 kc (Keys 4 and 5)

R-F Alignment Frequency ..... 1,500 kc (osc., ant.)

Intermediate Frequency ..... 455 kc

TUBE COMPLEMENT

(1) Type 6A8-G.....First Detector—Oscillator
(2) Type 6K7 .....I-F Amplifier
(3) Type 6H6.....Second Det., and A.V.C.
(4) Type 6F5.....Audio Voltage Amplifier
(5) Type 6K6-G .....Power Output
(6) Type 5Y3-G .....Full-Wave Rectifier

Pilot Lamp (1)..... Mazda 44, 6.3 volts, .25 amp.

POWER OUTPUT

Undistorted ..... 2 watts
Maximum ..... 4 watts

POWER SUPPLY RATINGS

Rating A..... 105-125 volts, 50-60 cycles..... 75 watts
Rating B..... 105-125 volts, 25-60 cycles..... 75 watts

LOUDSPEAKER (ELECTRODYNAMIC)

Diameter (inches) 5
V. C. Impedance at 400 cycles (ohms)..... 5.0

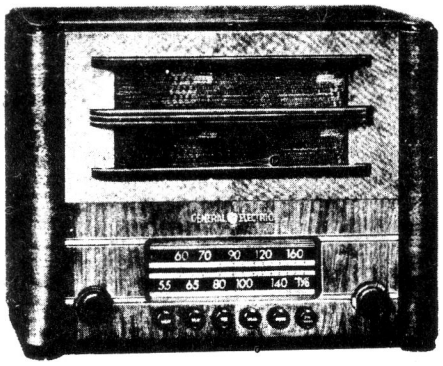
Mechanical Specifications

Height (inches)..... 9 7/8
Width (inches)..... 14 5/16
Depth (inches) 6 7/8
Net Weight (pounds)..... 12
Shipping Weight (pounds)..... 16
Chassis-Base Dimensions ..... 11 1/8 inches wide, 5 inches deep, 2 7/8 inches high
Over-all Height ..... 8 inches
Tuning Drive Ratio..... 6 to 1

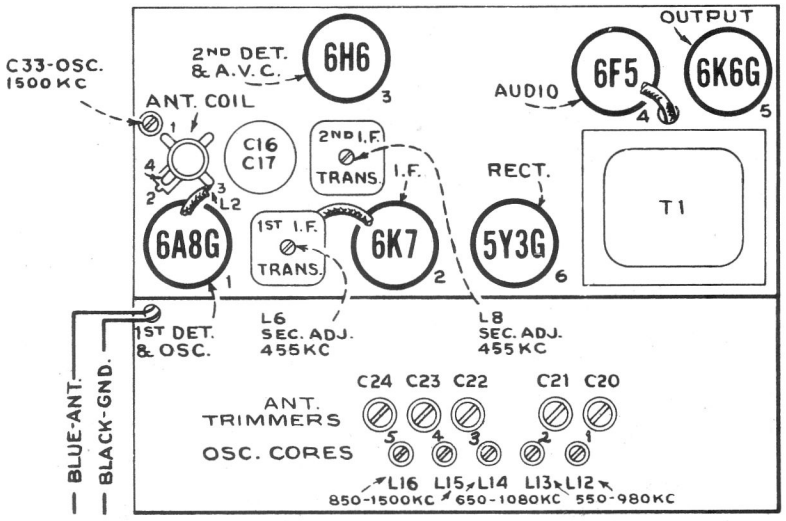
General Description

Model G-60 is a table type, six tube superheterodyne, having keys for electric-tuning of five stations in the standard-broadcast range, and one key for manual-tuning over the entire range of 540 to 1,720 kc.

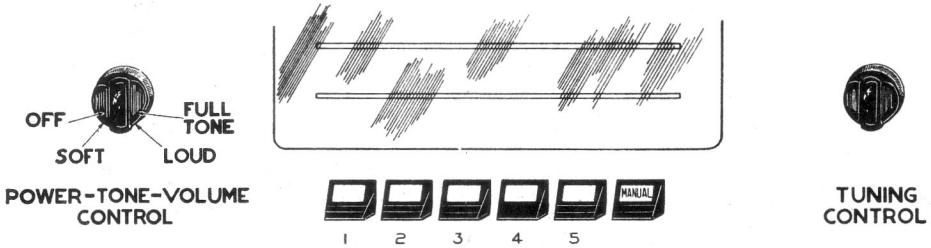
Features of design include magnetite-core i-f transformers, and magnetite-core electric-tuning oscillator coils; temperature-stabilized capacitor in the oscillator circuit; automatic volume control; electrodynamic loudspeaker, edge-illuminated straight-line dial, and continuously-variable high-frequency tone control.



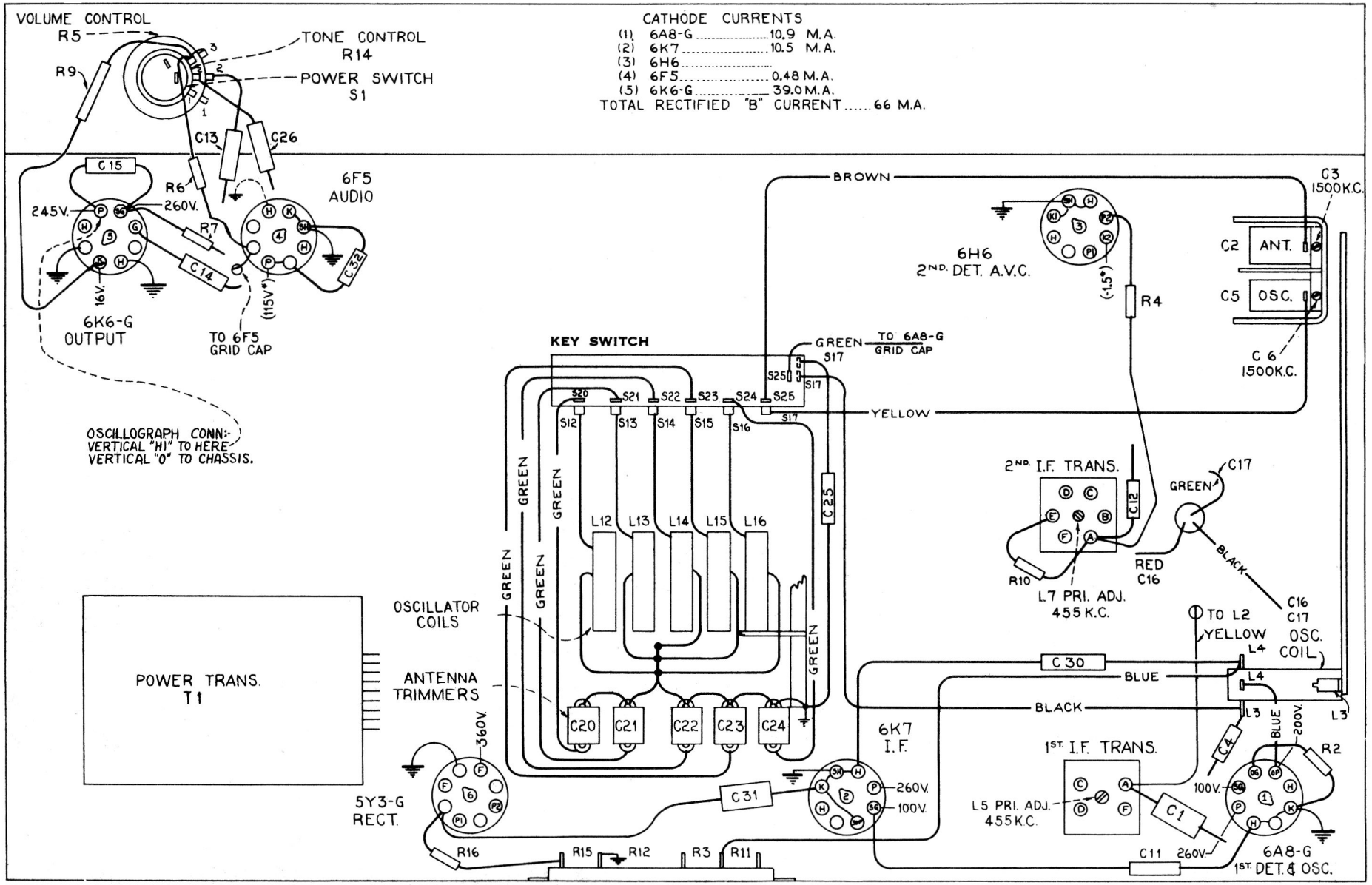
Model G-60



Tube and Trimmer Locations

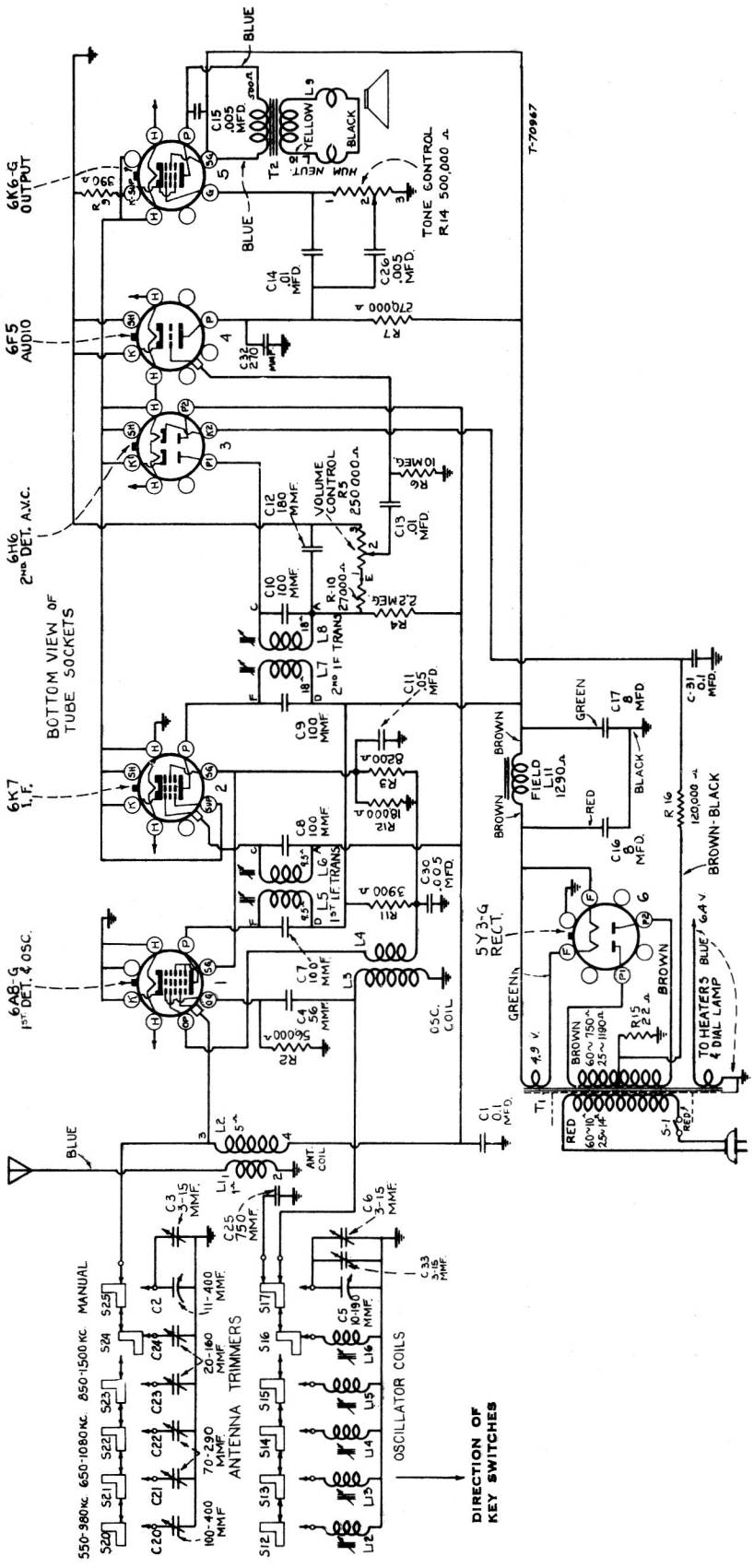


Location of Controls
The right-hand key is for dial tuning.



BOTTOM VIEW - REAR OF CHASSIS

R-F Wiring Diagram and Socket Voltages



Schematic Circuit Diagram
(L3 is 7½ ohms, and L4 is 2½ ohms)

Measurements made to chassis unless otherwise indicated, with set tuned to quiet point and volume control at minimum. Values should hold within approximately ±20% with 117-volt a-c supply.

*** NOTE:** Values with star (*) are operating voltages in circuits with high series-resistance. The actual measured voltages will be lower, depending on the voltmeter loading.

Alignment Procedure

Cathode-Ray Alignment is the preferable method. Connections for the oscillograph are shown in the chassis drawing. Turn the receiver volume control to maximum.

Output Meter Alignment.—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

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

Calibration Marks. — The tuning dial is fastened in the cabinet and can not be used for reference during alignment. Therefore calibration marks corresponding to dial readings of 600 kc and 1,500 kc have been stamped in the plate on the front of the chassis, as shown in the accompanying drawing. These marks are used for reference during alignment.

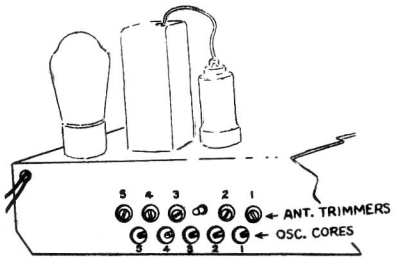
Drum and Dial Indicator Adjustment.—As the first step in r-f alignment, check the position of the drum on the front shaft of the gang condenser. With the gang at maximum (full mesh) the drum set-screw should be pointing directly down as shown in the drawing. With the drum in this position, and the gang at maximum, move the dial indicator along the drive cord to coincide with the left-hand line as shown. The indicator is held to the drive cord by means of spring clips.

After completion of alignment, and after the chassis has been fastened in the cabinet, turn the gang to maximum and note whether the dial indicator is at the left-hand end mark on the dial; if it is not, loosen the drum set-screw (which is accessible through a slot in the bottom of the cabinet), turn the drum slightly so that the indicator is at this mark, and then tighten the set-screw.

After completion of alignment, seal the i-f core-adjustment screws with household cement.

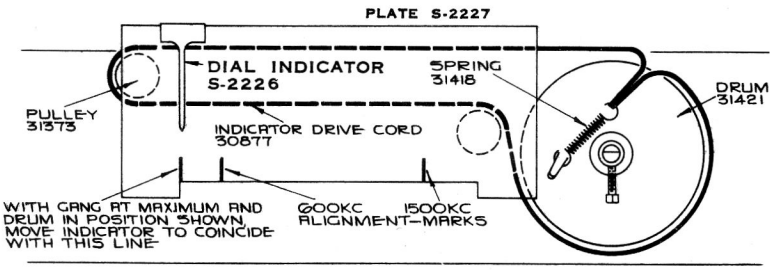
Steps	Connect the high side of test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output
1	6K7 I-F grid cap, in series with .01 mfd.	455 kc	Quiet point between 550-750 kc	L7 and L8 (2nd I-F Trans.)
2	6A8-G grid cap, in series with .01 mfd.	455 kc		L5 and L6 (1st I-F Trans.)
3	Antenna lead (blue) in series with 200 mmf.	1,500 kc	1,500 kc calibration mark.	C6 (osc.)* C3 (ant.)
4	Follow "Adjustments for Electric Tuning."			

*** The oscillator section of the gang condenser has two trimmers, one on top, accessible through a hole in the chassis, and the other on bottom. It may be necessary to adjust both of these trimmers to secure a peak on 1,500 kc.**



Key Adjustments

Nos. 1 and 2—Approximately 550-980 kc.
No. 3—Approximately 650-1,080 kc.
Nos. 4, 5—Approximately 850-1,500 kc.



DRUM SHOWN WITH GANG AT MAXIMUM CAPACITY

Dial-Indicator and Drive Mechanism

Refer to "Alignment Procedure" for explanation of the "calibration marks" shown in this drawing

Adjustments for Electric Tuning

This model has six keys. The right-hand key connects the gang condenser for manual tuning. The other five keys are for electric tuning of five different stations in the standard-broadcast range. The station keys connect to separate magnetite-core oscillator coils and separate antenna trimmers which must be adjusted for the desired stations. Use an insulated screwdriver or alignment tool. Allow at least five minutes warm-up period before making adjustments. Use a regular antenna for the preliminary adjustments.

The procedure is as follows:

1. Make a list of the five desired stations, arranged in order from low to high frequencies.
2. Push in the manual-tuning (right-hand) key, and manually tune in the first station on the list.
3. Push in station-key No. 1 (left-hand) and adjust No. 1 oscillator core (L12) to receive this station. Screw the core all the way in, to lowest frequency, and then unscrew slowly until the station is received.
4. Adjust No. 1 antenna trimmer (C20) for maximum output on this station.
5. Adjust for each of the remaining four stations in the same manner.

(Clockwise adjustment of oscillator cores and antenna trimmers tunes the circuits to lower frequencies.)

6. Make a final careful adjustment of the oscillator cores and antenna trimmers, using one or two feet of wire as an antenna to ensure sharp peaking.

Precautionary Lead Dress.—

1. Dress green lead from antenna coil to switch away from the chassis and gang.
2. Dress green leads from oscillator coils away from the adjustment screws.
3. Dress leads in power-transformer primary circuit to left end of chassis.
4. Dress ground bus from heater of 6H6 close to chassis, and dress blue lead from 2nd I-F transformer to volume control close to chassis.

REPLACEMENT PARTS — Model G60

STOCK No.	DESCRIPTION
	RECEIVER ASSEMBLIES
31416	Capacitor-Oscillator coils trimmer capacitor bank (C20,C21,C22,C23, C24).....
12723	Capacitor-56 mmfd. (C4).....
30904	Capacitor-100 mmfd.(C7,C8,C9,C10)...
13003	Capacitor-180 mmfd.(C12).....
12488	Capacitor-270 mmfd.(C32).....
31435	Capacitor-750 mmfd.(C25).....
4838	Capacitor-.005 mfd.(C15,C26,C30)....
14393	Capacitor-.01 mfd.(C13,C14).....
4886	Capacitor-.05 mfd.(C11).....
30899	Capacitor-0.1 mfd.(C1,C31).....
31424	Capacitor-Comprising 2 sections 8 mfd. each (C16,C17).....
31382	Clip-Oscillator coil and core mounting clip (Package of 2).....
30894	Coil-Antenna coil (L1,L2).....
31098	Coil-Oscillator coil (L3,L4).....
31383	Coil-Oscillator coil (L15,L16).....
31384	Coil-Oscillator coil (L14).....
31415	Coil-Oscillator coil (L12,L13).....
31422	Condenser-2-gang variable tuning condenser (C2,C3,C5,C6,C33).....
31413	Control-Volume control,tone control and power switch (R5,R14,S1).....
30877	Cord-Indicator drive cord.....
30905	Core-Adjustable core and stud for i-f transformers.....
31386	Core-Adjustable core and stud for oscillator.....
31421	Drum-Variable condenser drive cord drum.....
S-2226	Indicator-Station selector indicator pointer.....
11891	Lamp-Dial lamp.....
S-2227	Plate-Dial color plate.....
31373	Pulley-Indicator drive cord pulley..
31425	Resistor-Voltage divider comprising one 22 ohm,one 18,000 ohm, one 8,200 ohm, and one 3,900 ohm sections (R3,R11,R12,R15).....
31388	Resistor-390 ohms, 1 watt (R9).....
12738	Resistor-27,000 ohms,1/4 watt (R10).
12286	Resistor-56,000 ohms,1/4 watt (R2)..
13734	Resistor-120,000 ohms,1/4 watt (R16)
12199	Resistor-270,000 ohms,1/4 watt (R7).
12679	Resistor-2.2 meg., 1/4 watt (R4)....
13601	Resistor-10 meg.,1/4 watt (R6).....
14887	Retainer-Pulley retainer (Package of 20).....
14350	Screw-No.8-32 square head set screw for drum Stock No.31421 (Package of 10).....

STOCK No.	DESCRIPTION
31364	Socket-Dial lamp socket.....
31251	Socket-Radiotron socket.....
31418	Spring-Indicator drive cord tension spring (Package of 10).....
31414	Switch- - Key station selector switch (S12,S13,S14, S15,S16,S17,S20,S21,S22,S23,S24, S25).....
30957	Transformer-First i-f transformer (L5,L6,C7,C8).....
30903	Transformer-Second i-f transformer (L7,L8,C9,C10).....
31574	Transformer-Power transformer 100-120 volts,25-60 cycle (T1)..
31380	Transformer-Power transformer 100-120 volts,50-60 cycle (T1)..
	SPEAKER ASSEMBLY (84326-1)
31476	Cone-Speaker cone and voice coil (L9).....
S-2229	Coil-Field coil, (L11).....
31475	Speaker-Complete.....
31477	Transformer-Output Transformer (T2).....
	MISCELLANEOUS ASSEMBLIES
S-2228	Cover-Protective covers for key markers.....
S-2225	Dial-Station selector dial scale.....
S-2224	Escutcheon-Dial Escutcheon.....
S-2164	Key-Station selector switch key.....
30773	Knob-Volume control or tuning condenser large knob.....
S-2236	Knob-Tuning condenser small knob.
S-2154	Knob-Tone control and power switch knob.....
S-2182	Marker-Station call letter markers
S-2051	Screwdriver-Aligning screwdriver..
14270	Spring-Retaining spring for knob Stock No.30773 (Package of 5)....
30330	Spring-Retaining spring for knob Stock No. S-2154 (Package of 10).
S-2161	Marker-Manual tuning marker for key (Package of 10).....